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THE JOURNAL

OF THE

SOUTH AFRICAN ORNITHOLOGISTS' UNION.

VOLUME III.

PUBLISHED BY
THE UNION IN PRETORIA, TRANSVAAL.

LONDON AGENT:
R. H. PORTER 7 PRINCES STREET, CAVENDISH SQUARE, W.

1907.

ALERE FLAMMAM.



PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET, LONDON.

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Photo. from life by R. H. Ayv.

NESTLING INDICATOR VARIEGATUS (Scaly-throated Honey-guide).

THE JOURNAL
OF THE
SOUTH AFRICAN ORNITHOLOGISTS' UNION.

SECOND SERIES.
Vol. I.

JUNE 1907.

No. 1.

I.—*A Contribution to our Knowledge of the Indicatoridæ (Honey-Guides).* By ALWIN K. HAAGNER, F.Z.S., M.B.O.U., and ROBERT H. IVY.

(Plates I. & II.)

I. GENERAL REMARKS.

DR. BREHM in his 'Tierleben' (Vögel, Band i.), following Fürbringer, places the Indicatoridæ in a separate family by themselves. Mr. W. L. Selater, M.A., followed this classification in his work on the Birds in his 'Fauna of South Africa' series. Mr. F. E. Beddard, F.R.S., &c., on the other hand, like Gadow, has included them under the family Capitonidæ in his valuable 'Structure and Classification of Birds.' We are more inclined to fall in line with the first mentioned authors as regards the classificatory position of the Honey-Guides. They have only nine primaries, with the first one almost as long as the second, as against ten in the Capitonidæ, the first of which is short. The members of the Indicatoridæ possess twelve rectrices, with the exception of the genus *Prodotiscus*, which only has ten. In their parasitic habit of depositing their eggs in the nests of other birds (now proved beyond a doubt, at least so far as the South African species are concerned) they closely resemble the Cuculidæ, in which family Nitzsch placed them. The

latter further says of the Cuculinæ* that the members have no definite pterylographic character, the only constant one common to the group being “the nakedness of the tip of the oil-gland, which is not furnished with a circlet of feathers.” Although Nitzsch writes thus of the Cuculinæ (*in which he includes the genus Indicator*) he makes a diametrically opposite statement in his paragraph on *Prodotes* (*Indicator*, auctt.), in which he says “oil-gland with a small circlet of feathers at the tip, the quills of which extend to the walls of the apex.”

The Capitonidæ, so far as we are aware, are *not* parasitic in their nidificatory habits, so taking all points into consideration it would appear both more correct and more convenient to place the *Indicators* in a family by themselves. There are, moreover, certain marked points in the anatomy of the nestling *Indicator* which do not occur, so far as we can ascertain, in the nestlings of either the Cuculidæ or Capitonidæ—or perhaps, indeed, in any living bird,—differences which in themselves should be sufficient to relegate the Honey-Guides to a family of their own.

II. EXTERIOR ANATOMY.

A. *Physiology*.—The main points worthy of note are those occurring on the head of the nestling :—

The extremity of the beak is furnished with a pair of hooks, which are hard, strong, and very sharp. These peculiar appendages, which remind one of the reptile-like toothed birds of the Jurassic and Cretaceous days long gone, such as *Archæopteryx macrura* from the Middle Oolites, are very curious as far as bird anatomy is concerned, and one is led to wonder at the reason of their presence on the nestling *Indicator*. We can only conjecture that they are of use to the bird when ejecting the young of the rightful owners of the nest, as the nestling would, by means of these hooks, have a perfectly

* We are quoting from the English translation edited by Dr. P. L. Slater, F.R.S., and published by the Ray Society, not having had access to a copy in the original.

firm hold of the bird it wanted to throw out. This presumption is doubly feasible when nests in holes of trees, such as those of Woodpeckers, Barbets, &c., are taken into consideration, as in these instances the method employed by young Cuckoos of working themselves under their victims and so ejecting them would not be of the slightest use. As all eggs discovered were in nests of this description it would appear that our explanation is not without reasonable foundation. These tooth-like appendages measure 1·8 mm. in total length, the *projecting portion* of the top tooth being 0·9 mm. and that of the bottom one 0·5 mm., and are situated at the extremity of the beak; the superior aspect of the top tooth being prolonged slightly above the surface of the premaxilla, while the inferior aspect of the bottom one is slightly projected beyond the lower level of the mandible, both having the distinct appearance of being welded on to the ends. They overlap one another, thus enabling the bird to obtain a very sure hold of anything it applied its beak to. These hooks are semi-transparent and appear to be an exaggeration of the shell-breaking scale which occurs on the beaks of chickens,—thus being epiblastic in origin, whereas the teeth of *Odontornithes* and *Archæopteryx* were true teeth and consequently partly epiblastic and partly mesoblastic in origin. It will thus be seen that the teeth of the ancient reptile-like ancestors of modern bird-life, and the projections on the beak of the nestling *Indicator*, are in no way related; consequently it does not appear like a case of reversion, and would seem more after the nature of a subsequent development engendered by the bird's habits of life.

The photograph (Plate I.) shows plainly what we have tried to describe. This was taken from a young *Indicator variegatus* (now preserved in formalin) found in a nest-hole of *Petronia petronella* (Diamond Sparrow) on the 12th of November, 1905. The adult *Indicator* was seen in the tree, and no young Sparrows were found in the nest. Although large (the nestling measures 90 mm. in total length), we presume it developed quickly after the manner of young Cuckoos, and should judge its age as not more than ten days

at the outside, as it could hardly open its eyes, keeping them almost constantly closed. The hooks apparently fall off when the bird is fully adult, although there are traces of their existence in the slightly flattened end of the premaxilla, and the membranous scaly appearance of the terminal portion of the mandible of several adult specimens of *Indicator sparrmani* and *I. minor* examined by us. The beaks of the adult specimens of *Indicator* have the culmen and genys much more curved than that of the young bird under discussion, and it is therefore easy to see where the hooks part from the beak, and by the distinctly welded appearance of the whole structure they are very obviously only superficially connected.

The second noteworthy point about the head is that the nostrils have the same swollen appearance as those of young Cuckoos, but instead of being rounded as in the Cuculidæ, they are of an elongated ovate form, appearing more in the form of slits.

B. *Pterylosis*.—The following description is taken from the specimen of *Indicator variegatus* alluded to in the preceding chapter :—

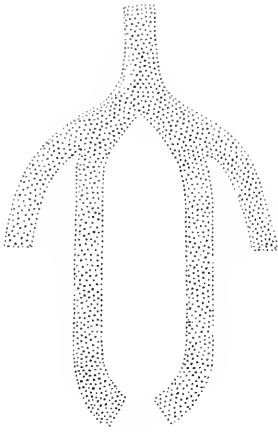
Pteryla capitis. Calls for no comment except that the feather-follicles are very minute, and their presence is only known by the shading in the skin.

Pt. spinalis. This is a very narrow tract and ill-defined until the back is reached. Indeed from its juncture with the *Pt. capitis* it is represented only by a dark shading in the skin, which is so faint at the part left blank on the sketch as to be almost invisible, even with a strong magnifier. On the back it assumes two branches, somewhat triangulated on the outer edges, but the true rhombic saddle and lanceolate space mentioned by Nitzsch have not yet been formed. Where the rhombic region ends, the young feather-follicles are plainly visible.

Pt. humerales. The humeral tracts are very sharply defined bands, and consist of very well developed follicles.

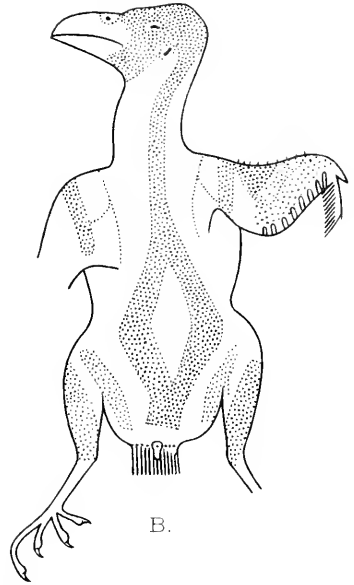
Pt. alarum. These are also well defined, and do not differ from Nitzsch's figure of the adult *Prodotes*.

Ventral Aspect



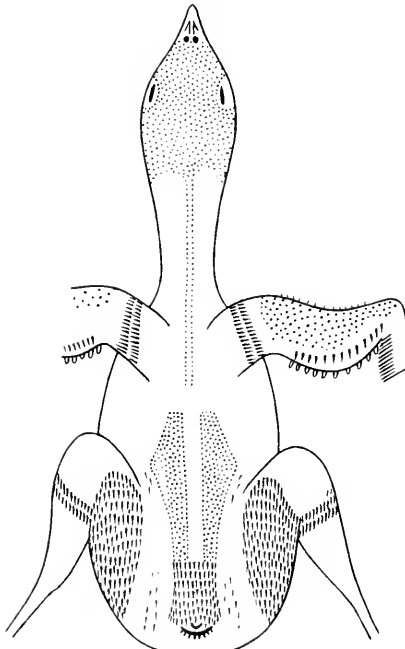
A

Dorsal Aspect.



B.

Adult Indicator (Prodotes)-after Nitzsch



C.

Dorsal Aspect of Nestling Indicator Variegatus-after Haagner

A K Haagner del

Bale & Danielsson. L^{td} lith

Pt. gastræi. The ventral tract is clear, and in accordance with Nitzsch's figure, except that the lower extremities end more abruptly and with very little curvature.

Pt. femorales. Sharply defined, of well developed follicles, and considerably broader than Nitzsch's sketch would lead one to suppose.

Pt. crurales. A double band of follicles across the thigh. There are no signs of feathers—not even a shading in the skin—on the lower regions as figured by Nitzsch in the adult. Of course it is possible that these appear much later in life.

Apt. trunci lateralia. The lateral spaces of the trunk show a few scattered small but very distinct follicles, which are also not illustrated by Nitzsch. At some future date we hope to examine adult specimens of the various species of *Indicator* occurring in South Africa, to see how this fact agrees with the nestling above described.

Our remarks on the nidification of this family will appear in a subsequent paper on the birds of Albany Division, Cape Colony.

EXPLANATION OF PLATES.

PLATE I. Nestling *Indicator variegatus*, showing peculiar development of beak and nostrils, and lateral aspect of pterylosis. (Slightly enlarged.)

PLATE II. Pterylographic characters of *Prodotus* (after Nitzsch), figs. A & B; and nestling *Indicator variegatus* (slightly reduced), fig. C.

II.—*Further Notes on the Occurrence and Nesting of some South African Birds.* By RICHARD SPARROW, M.B.O.U., Major 7th Dragoon Guards.

[The numbers prefixed are those of Sclater's 'Check-list.']

584. SCOPUS UMBRETTA. (Hammerkop.)

This bird sometimes lays six eggs; I took a clutch of six at Elandslaagte on 14.9.02.

609. PHŒNICOPTERUS ROSEUS. (Greater Flamingo.)

A flock of about thirty were observed at Matjespan, O.R.C., near the Lace Diamond Mines, on the 28.6.02.

611. PLECTROPTERUS GAMBENSIS. (Spur-winged Goose.)
This bird nests in January and February in Natal.

597. BUTORIDES ATRICAPILLA. (Green-backed Heron.)

Mr. A. D. Millar informs me he had three eggs brought to him, taken on the 7.11.02 from a nest in a mangrove at the head of Durban Bay, which he believes to belong to this species.

615. DENDROCYCNA VIDUATA. (White-faced Duck.)

Mr. A. D. Millar found a nest of this species containing twelve eggs near the Durban Racecourse on 7.1.97.

619. ANAS UNDULATA. (Geelbek.)

On the 14.4.02 I found a nest of this Duck containing nine fresh eggs: the nest was on the high veldt near a small spruit, in grass about 1 foot high, in the Harrismith district.

620. ANAS SPARSA. (Black Duck.)

Mr. A. D. Millar found a nest of this Duck containing hard-set eggs near Kopstad, C.C., on the 19.8.98.

It seems as if the S.A. ducks are very irregular as to the months in which they breed, unless they are double-brooded, as I have found full-fledged young in the months one would expect eggs and *vice versa*.

623. PÆCILONETTA ERYTHORHYNCHA. (Red-bill.)

A nest of this species found on the banks of a small spruit near Winburg on 18.8.01 contained seven very hard-set eggs.

618. CASARCA CANA. (South African Shelduck.)

I saw a pair of this species with several half-fledged young on a dam in the Winburg district, O.R.C., on the 9.9.01.

629. VINAGO DELALANDI. (Delalande's Green Pigeon.)

A nest of this species found by Mr. A. D. Millar at Inchanga on the 27.12.02 contained one egg and one young bird.

632. COLUMBA ARQUATRIX. (Olive Pigeon.)

This species in the Balgowan district of Natal nests in April and May.

638. *TURTUR SENEGALENSIS*. (Laughing Dove.)

This Dove nests in August and September in the O.R.C.

639. *ÆNA CAPENSIS*. (Namaqua Dove.)

I found nests of this Dove in the O.R.C. in Aug., Sept., and Nov., and in Natal in Nov. and also in Feb. My experience is that their eggs are invariably cream-coloured and not white as stated in vol. iii.

642. *HAPLOPELIA LARVATA*. (Lemon Dove.)

I took a fresh clutch of the eggs of this Dove at Balgowan, Natal, on 20.2.04.

646. *PTEROCLURUS NAMAQUA*. (Namaqua Sandgrouse.)

The normal number of eggs in a clutch is three, and I found fresh eggs between 6.8.01 and 4.9.01.

663. *NUMIDA CORONATA*. (Common Guinea Fowl.)

I found a clutch of twenty eggs, on which only one bird was sitting, at Highlands, Natal, on 27.12.03: the eggs were hard-set.

685. *FULICA CRISTATA*. (Red-knobbed Coot.)

Mr. A. D. Millar found a nest of this Coot near Dundee on 1.6.03 containing six eggs.

687. *BUGERANUS CARUNCULATUS*. (Wattled Crane.)

I found a nest of this Crane in a dam at Hidcot, Mooi River, containing one fresh egg, on the 2.5.04; the nest was a large pile of weeds in about 2 feet of water.

689. *BALEARICA REGULORUM*. (Crowned Crane.)

A clerical error in vol. iv. says I took eggs of this Crane "near Mooi River in May"; it should read Dannhauser in February.

692. *OTIS AFROIDES*. (White-quilled Knorhaan.)

I found several clutches of fresh and incubated eggs near the Modder River, O.R.C., in Aug. '01, and again fresh and incubated eggs near Lindley, O.R.C., in the middle of Dec. '01. It may therefore be presumed that this species rears two broods a year.

700. OTIS BARROWI. (Barrow's Knorhaan.)

This Bustard is scarce in the N.E. part of O.R.C., except in the Lindley district, where it is fairly plentiful. I found a nest containing three eggs just hatching on 9.12.01 near Lindley.

695. OTIS LUDWIGII. (Ludwig's Paauw.)

I found a young bird of this species about ten days old near Newcastle on 27.10.02. The old hen ran up to within 10 yards of me with her wings scraping the ground like a cock turkey showing off.

697. OTIS MELANOGASTER. (Black-bellied Knorhaan.)

The Durban Museum contains one sky-blue egg, unspotted, belonging to this species taken in Zululand; in shape it resembles an orange.

702. ŒDICNEMUS CAPENSIS. (Dikkop.)

Fresh clutches of eggs of this species were taken on the following dates: Kroonstad, 23.11.01; Newcastle, 9.11.02; Reitz, O.R.C., 4.2.02.

705. CURSORIUS RUFUS. (Burchell's Courser.)

This Courser lays at the end of July or beginning of August in the O.R.C. and Upper Natal, though occasionally eggs will be found in September.

706. CURSORIUS TEMMINCKI. (Temminck's Courser.)

I found a dead bird of this species at Kroonstad in June 1901.

707. RHINOPTILUS AFRICANUS. (Two-banded Courser.)

I took hard-set eggs of this Courser and also saw young birds about the middle of August '01 near the Modder River; on Sept. 5 I took one hard-set egg near Winburg, and fresh eggs near Lindley on 16th and 25th Nov.

It seems probable that this species is also double-brooded.

719. HOPLOPTERUS ARMATUS. (Blacksmith Plover.)

Both nests of this species found in the Winburg district were only a few feet away from the water on the side of

dams: the first found on 20.8.01 contained one fresh egg, and the second on 10.9.01 contained three hard-set eggs.

728. *ÆGIALITIS TRICOLLARIS*. (Three-banded Plover.)

The time for fresh eggs in the districts of Potchefstroom, Winburg, and Upper Natal is from August 15–31.

732. *ÆGIALITIS PECUARIA*. (Kittlitz's Sand Plover.)

A clerical error in vol. iv. says I took eggs at "Mooi R.;" it should read "Ladysmith." Time for fresh eggs, both at Potchefstroom and Ladysmith, is from August 15–31.

739. *TOTANUS NEBULARIUS*. (Greenshank.)

I observed this bird both at Mooi River and Ladysmith in the month of September.

751. *GALLINAGO MAJOR*. (Double Snipe.)

Was common on the Eastern Vlei, Durban, in Nov. '99, and bags of ten or twelve couple were made before breakfast that year.

III.—*Remarks on the Breeding-Habits of the Pin-tailed Widow Bird* (*Vidua principalis*). By AUSTIN ROBERTS.

THE late Dr. Stark, in his excellent work on the ornithology of South Africa, mentions that he found the nests of the Pin-tailed Widow Bird containing young birds, and minutely describes these nests. He writes without, apparently, the least doubt as to the identity of the nests and the young birds. After perusing this article it will be seen how far he was correct, while he little suspected how the young birds happened to be in the nests he discovered.

Before proceeding, I shall like to draw attention to his following remarks on the subject, which will be found to bear out my statements to a certain extent:—"The only nests that I have seen contained young birds, from three to four in number. The eggs have not been described. A nest brought to Heuglin in Abyssinia, and ascribed by him

to the present, is, from the description, obviously that of one of the African Tailor-birds."

It was not until after many an unsuccessful search for the nest of this bird that I one day stumbled upon a clue to its peculiar breeding-habits. When talking about birds to an old Natal colonist he happened to mention that the Zulus have a saying that a young "King-red-beak" (*Vidua principalis*) is reared out of every "rooibekje's" (*Estrilda astrilda's*) nest, they, as usual, imputing it to some supernatural agency. Here I had the key to the solution of what had for so long puzzled me, and I immediately acted on it. It is well known how often the superstitions of the observant natives have been found to be based upon fact, and this, I have no doubt, is another instance. On examining my egg collection I noted particularly one clutch which quite bore out my expectations, viz., that the Pin-tailed Widow Bird is in the habit of laying its eggs in the nest of some other bird. This clutch was one of the Dufresne's Waxbill (*Estrilda dufresnii*), four eggs of which were of uniform size—about the size one would expect; but the fifth was much larger, and clearly not an egg laid by the Waxbill. Following this up, I took care to examine all Waxbills' nests found about that time, from December to March, and found that it was quite a common occurrence to find one or more of the larger eggs and the usual type of those of the Waxbills in the same nest. The mere fact of finding the larger eggs in the same nest as the smaller ones did not, however, prove much, but the following cases which came to my notice quite convinced me that my theory was correct. The first was the discovery of a nest of a Common Waxbill (*E. astrilda*) containing five fledgelings; four were undoubtedly young Waxbills, the white spots on the gape—which are always found on young birds of that genus—clearly distinguishing them from the fifth, which, in addition to lacking the white spots, differed in other respects. I left the fledgelings, intending to get them a few days later when they were more developed, but I was unfortunately delayed and when I returned they had left the nest. Another day,

when walking through the "bush," I thought I would have a look at a nest I had found a few days previously, which had then only two eggs of the usual Common Waxbill type. When close to the nest a hen of the Pin-tailed Widow Bird flew from it and alighted upon a neighbouring tree, wiping her beak as she did so, and remaining there until I approached quite close. In the passage leading into the nesting-chamber I found a half-devoured egg, and in the chamber itself four whole eggs, one of them larger than the others. I conclude from what I saw that the bird I disturbed was in the act of devouring a Waxbill's egg to make room for her own. As already stated, the Pin-tailed Widow Bird does not confine itself to depositing one egg in each nest. I have frequently found two, and in one case discovered a nest in which the whole clutch of five eggs was replaced by those of the Pin-tailed Widow Bird. This I am sure about, as when I first found the nest some of the eggs were larger than the others; and on leaving them to hatch, I found when again visiting the nest that they were all of the larger size, and the nest deserted.

It will be seen how easily Dr. Stark may have been deceived with regard to the identity of the nest he found, presuming that he formed his conclusions on seeing the young birds only. The nest brought to Heuglin was probably similarly identified.

In concluding I must express a hope that other South African oologists will take the matter up and examine with greater care all nests of Waxbills which they may come across, and, not only for my own satisfaction, but for naturalists generally, publish their observations in this Journal.

IV.—*Notes on a Collection of Birds made in the Amsterdam District upon the Transvaal-Swazieland Border between the Months of June and October, 1906.* By CLAUDE H. TAYLOR : assisted by J. A. BUCKNILL, F.Z.S., M.B.O.U.

THE collection of which an account is given below was made during a short stay of some five months upon the farm Indhlovudwalilie (No. 260), situated in the extreme south-eastern portion of the magisterial district of Ermelo in the Transvaal. The farm is situated about 31° long. and about $26^{\circ}9'$ lat. ; it is about 100 miles from the sea as the crow flies, the nearest littoral being at the top of Tongaland.

The farm Indhlovudwalilie ("Elephant's Rock" in the Swazi language) lies about ten miles south-east of the dorp of Amsterdam. Most of the birds detailed below were actually obtained upon the farm grounds, which are about 6000 morgen in extent. The physical characteristics of the farm are particularly favourable for the observation of several typical classes of birds ; the land over which the farm extends varies in altitude in a most remarkable degree.

Part of the farm lies on the high plateau of that type of ground which is regarded as typical of the mountainous parts of Swazieland ; here it is healthy at all times of the year and is over 5000 feet above sea-level, whilst the lowest part of the farm is not less than 4000 feet.

The ground runs down very abruptly into the valley of the Compise River, which passes a perennial stream through deeply cut gorges fed by numerous mountain streams rising in the hills above throughout the watershed through the southern part of the farm from west to east.

The Compise River itself is not well wooded, though its tributaries in the mountain krantzes are very thickly bushed. On the main river the country is typically an open park-like thorn-covered land.

The higher parts of the farm present the ordinary features of the high veld ; the slopes leading down to the river are

densely wooded and offer all attractions to bush-loving birds; the waters of this large stream attract many aquatic and similar species which frequent the vicinity of localities where congenial food can be found.

Some of the birds mentioned in my notes have doubtless followed up the river-course from the more tropical parts of Swazieland.

This list is based on a collection of 101 skins made during the four winter months (from June until the middle of October) and is in no way intended to be a complete list of the birds of this district.

My thanks are due to Mr. J. A. S. Bucknill for having revised the following notes, and for looking through my collection and verifying the names; and also to Dr. Gunning, who gave me every assistance in identifying dubious specimens.

Species prefixed by an asterisk are not represented in the collection.

1. *CORVUS ALBICOLLIS*. (White-necked Raven.)

Fairly common. These birds are a great nuisance to the sheep-farmer and are very destructive to lambs and sickly sheep, especially during the lambing-season. On several occasions on the farm Indhlovudwalilie I have known them to kill lambs. The eyes are first picked out, and then when the animal opens its mouth to bleat the tongue is torn out by the roots, the beak of the bird being inserted at the side of the animal's mouth.

The damage done by these birds as well as *Gyps kolbii* (Kolbe's Vulture) does not seem to be generally recognised. Farmers in this district and also in the Amersfoort district have now resorted to the practice of putting poisons in the carcasses of animals and sheep and kill numbers of Vultures in this way. I lately came across the dead body of a Secretary Bird close to one of these poisoned carcasses, but whether it had died from poison or from natural causes I cannot say, but it appeared to be quite healthy and in good condition.

3. *CORVUS CAPENSIS. (Black Crow.)

Occasionally observed.

Not uncommon. Generally to be seen in small flocks of from ten to twenty frequenting old mealie lands, where they seem to obtain most of their food.

5. *BUPHAGA ERYTHORHYNCHA. (Red-billed Oxpecker.)

Only one flock of these "Tick birds" seen. They seem to keep to one locality as long as there are cattle about. I notice, however, that in this district they only visit them in the early morning and in the evening, when they busily pick off any ticks that are on them. This is not always the case, as in the Koodoo Valley in the Zoutpansberg I have seen them searching for food on oxen and donkeys in the middle of the day. Towards the end of September this flock had apparently broken up for nesting, as they were only to be seen either singly or in pairs. They are very difficult to frighten away from the oxen, flying from one animal to another when disturbed.

7. AMYDRUS MORIO. (Red-winged Starling.)

(a) ♀. Indhlovudwalilie. 5.9.06. In stomach insects.

Common. A pair of these birds have roosted in the piping round the house here for three years, nesting and bringing out young ones; as soon as these are old enough to take care of themselves, the old ones take them away to the bush and leave them there, returning themselves to their old quarters. They are very restless at night, when they are constantly running along the piping, uttering towards morning a low chirping whistle.

9. *SPREO BICOLOR. (Pied Starling.)

Fairly common. On November 2nd I took a nest containing five eggs out of a wall in a disused farmhouse in the Amersfoort district. The nest was an untidy one composed of grass and sticks, being lined with a few pieces of old sacking and sheep's wool. The eggs were of the usual type, being bright pale blue without spots:

Maximum length 30.1 mm. ; minimum length 28.7 mm.

Maximum breadth 22.2 mm. ; minimum breadth 21.1 mm.

19. CINNYRICINCLUS LEUCOGASTER VERREAUXI. (Verreaux's Glossy Starling.)

(a) ♂. 18.10.06. Swazieland. Iris yellow. In stomach insects.

These beautiful Starlings are migratory in this district, arriving about the beginning of September. By the middle of October they are fairly common, always going about in pairs; so that I think they must breed in this locality. Sometimes I found them very wild and difficult to approach, although, as a rule, they are not very shy.

22. ORIOLUS LARVATUS. (Black-headed Oriole.)

(a) ♀. 14.6.06. Indhlovudwalilie. Iris claret-red. In stomach insects and seeds.

(b) ♂ juv. 10.7.06. Indhlovudwalilie.

Common. These birds often frequent Red Alocs which grow in this district, where they apparently hunt for insects; on two specimens which I shot I found the feathers round the beak and throat very thickly covered with pollen, giving the bird a peculiar appearance as if it had a red beak and head or as if dipped in a red colouring solution.

30. *SITAGRA OCULARIA. (Smith's Weaver-Bird.)

Not common. A pair of these birds were nesting in a tree overhanging the Compise River in the beginning of October. I noticed that some of the same birds had nested in the same tree the year before.

33. SITAGRA CAPENSIS OLIVACEA. (Eastern Cape Weaver-Bird.)

(a) ♀. 17.6.06. Indhlovudwalilie. Iris brown. In stomach insects.

(b) ? ♂. 16.10.06. Swazieland. Iris whitish with a tinge of yellow.

The head and neck of this bird (a) was thickly covered with the red pollen of the "Kaffir-boom," on which it had been feeding.

The plumage of (b) is curious, as the bird is just assuming breeding colours; the yellow is beginning to show on the

under surface of the body and the brownish orange of the head and neck is very patchy.

52. *ESTRILDA ASTRILDA*. (Common Waxbill.)

(a) ♂. 20.8.06. Indhlovudwalilie. In stomach seeds.

(b) ♀. 20.8.06. Indhlovudwalilie. In stomach seeds.

Very common. Going about in large flocks and frequenting old mealie-gardens.

58. **ESTRILDA DUFRESNII*. (Dufresne's Waxbill.)

Not common. They seem to be more partial to wooded localities than the other members of this family.

75. **COLIOPASSER PROCNE*. (Great-tailed Widow Bird.)

Very common. The males begin to change their plumage about the beginning of September. They do a great amount of damage amongst the newly planted mealie lands, rooting out the plants as soon as they show above ground and eating the grain.

76. *COLIOPASSER ARDENS*. (Red-collared Widow Bird.)

(a) ♂. 15.10.06. Swazieland. In stomach insects.

(b) juv.

Very common, especially along the sides of the rivers and spruits.

77. *VIDUA PRINCIPALIS*. (Pin-tailed Widow Bird.)

Fairly plentiful.

87. *POLIOSPIZA GULARIS*. (Streaky-headed Seed-eater.)

(a).

Common. Very fond of the fruit of wild fig-trees.

89. *SERINUS SULPHURATUS*. (Large Yellow Seed-eater.)

(a) ♂. 5.6.06. Indhlovudwalilie. In stomach seeds.

131. *CERTHILAUDA SEMITORQUATA*. (Grey-collared Lark.)

(a). 24.8.06. Indhlovudwalilie. Iris dark brown. In stomach insects.

Fairly common. When the grass has been burnt off these birds become very tame, allowing one to ride close up to

them, when they can easily be killed with a whip. They run very swiftly.

135. *MACRONYX CAPENSIS*. (Orange - throated Long-claw.)

(a) ♂. 15.6.06. Iris brown.

Very common.

136. *MACRONYX CROCEUS*. (Yellow-throated Long-claw.)

(a) ♀. 15.10.06. Swazieland. Iris dark brown. In stomach insects.

Said to be fairly common, although I only came across one specimen. On being chased, this Long-claw flew from one thorn-tree to another for some distance, being apparently rather shy.

139. *ANTHUS LINEIVENTRIS*. (Stripe-bellied Pipit.)

(a) ♂. 2.10.06. Swazieland. In stomach insects.

Rare. Only seen on one occasion; I saw a pair on the ground, where they were evidently hunting for insects, in open thorn country. I watched them for some little time through my glasses; on my approach, however, they immediately took shelter in some undergrowth at the foot of a thorn-tree, where I shot one.

147. *MOTACILLA VIDUA*. (African Pied Wagtail.)

(a) ♀. 5.10.06. Swazieland. In stomach insects.

Only one pair seen. They nested on the ledge of a rock in the middle of the Compise River early in October 1906; the nest was cup-shaped, made of dry grass and small roots, being lined with very fine roots and hair. The eggs, three in number, were of the usual type though rather small, measuring 21.9×1.59 , 21.6×1.66 , and 21.6×1.6 mm. Ground-colour pale whitish; texture of shell smooth; thickly spotted and freckled throughout with surface and underlying markings of light brownish and yellowish brown-grey.

148. *MOTACILLA LONGICAUDA*. (Grey-backed Wagtail.)

(a) ♂. 28.6.06. Indhlovudwalilie. Iris brown. In stomach insects.

I have seen several pairs of these pretty little Wagtails frequenting rocky streams where there is plenty of bush. More than one pair never seem to haunt the same stream. They are very tame and are easily approached.

149. **MOTACILLA CAPENSIS*. (Cape Wagtail.)

Common.

156. *PROMEROPS GURNEYI*. (Natal Long-tailed Sugar-bird.)

(a) ♀. 2.8.06. Swazieland.

Fairly common in Swazieland. Feeding chiefly on the sugar-bush; they are sometimes shy and rather difficult to approach.

157. **NECTARINIA FAMOSA*. (Malachite Sunbird.)

Very common in the more low-lying part of the district.

160. *CINNYRIS AFER*. (Greater Double-collared Sunbird.)

(a) ♂. 3.6.06. Indhlovudwalilie.

Very common, especially in Swazieland. I found them nesting in the latter part of September; the nest was placed in a sugar-bush and seemed largely composed of dry grass and cobwebs. The specimen preserved was not in full breeding-plumage, the metallic green feathering being very patchy on the back, though fully developed upon the head.

164. *CINNYRIS AMETHYSTINUS*. (Black Sunbird.)

(a) ♂. 15.6.06. Iris brown. In stomach seeds.

Fairly common near the river, but also observed on the top of the plateau.

176. *ZOSTEROPS CAPENSIS*. (Cape White-eye.)

Common in the thick bush. It is a very tame bird; I have often been within a few feet of them without their showing any signs of alarm.

179. *PARUS NIGER*. (Black Tit.)

(a) ♀. 4.6.06. Indhlovudwalilie. In stomach insects.

Common. Generally to be seen in small flocks of six or seven busily hunting through the bush for insects. They

are constantly flying from one tree to another and move with wonderful rapidity from twig to twig when searching for food.

184. *LANIUS COLLARIS*. (Fiscal Shrike.)

(a) ♀. 19.10.06. Swaziland. Iris brown.

Common. Generally to be seen perched on a prominent branch or on the top of a fencing pole. On one occasion I saw two frogs impaled on a barbed-wire fence, doubtless by this bird.

191. *TELEPHONUS SENEGALUS*. (Black-headed Bush-Shrike.)

(a) ♂. 30.7.06. Indhlovudwalilie. In stomach insects.

Fairly common; it is not entirely confined to the thick bush. I have frequently seen it in mimosa-trees in fairly open country; they always make for the thickest part of the tree when disturbed, and in this position are very hard to see. On one occasion I hit a small bush three or four times before the bird flew out.

192. *TELEPHONUS TCHAGRA*. (Tchagra.)

(a) ♂. 30.7.06. Indhlovudwalilie. In stomach only seeds.

I only saw one specimen of this Shrike, it was in some thick bush only a few yards away from me when first I noticed it. It did not attempt to make its escape by flight, but kept hopping away from me in the thick undergrowth, always keeping quite close to the ground.

195. *DRYOSCOPUS CUBLA*. (Lesser Puff-back Shrike.)

(a) unsexed. 28.7.06. Indhlovudwalilie. Iris bright red. In stomach insects.

Fairly common. They seem to prefer the thick bush to the lesser wooded localities.

196. *DRYOSCOPUS RUFIVENTRIS*. (Greater Puff-back Shrike.)

(a) ♂. 20.8.06. Indhlovudwalilie. In stomach insects.

Fairly common. These noisy birds may be heard calling

to one another on any fine morning ; their loud note seems to carry for a long distance and can be heard above that of any other birds.

200. LANIARIUS GUTTURALIS. (Backbakiri Shrike.)

(a) ♀. 17.6.06. Indhlovudwalilie. In stomach insects.

I have only seen one specimen of this Shrike and conclude that it is not common in this district.

202. LANIARIUS RUBIGINOSUS. (Ruddy-breasted Bush-Shrike.)

(a) ♀ sex well marked. 14.8.06. Indhlovudwalilie. Iris reddish brown. In stomach insects.

(b) sex unrecognizable. 17.6.06. Indhlovudwalilie. In stomach insects.

(c) ♀. 23.9.06. Indhlovudwalilie.

There are a considerable number of Bush-Shrikes to be found in the thickest bush. The plumage of many which I have shot is very puzzling, and it is difficult to identify the specimens I have obtained. In most cases the birds appear to be immature both from their plumage and from the absence of sexual internal characteristics. These immature birds are fairly common, and although they are all shy the mature birds, when frightened, immediately seek the undergrowth of the Bush, where it is impossible to secure them, whilst the immature birds do not attempt to conceal themselves in this way but keep to the bushes themselves. This shyness on the part of the mature birds may account for their apparent scarcity. The plumage of the immature specimens makes it difficult to refer them with certainty to either this or the succeeding species.

203. LANARIUS OLIVACEUS. (Olive Bush-Shrike.)

(a) ♂. 28.7.06. Indhlovudwalilie. In stomach insects.

(b) ? ♂ juv. 30.7.06. Indhlovudwalilie. Iris dark reddish brown. In stomach insects.

(c) ♀ with eggs distinctly developed (about twice the size of a pin's head). 23.9.06. Indhlovudwalilie. This bird is in immature plumage.

The remarks made with regard to the preceding species apply equally to this. Both these species utter a loud harsh scraping call: one, when wounded and in my hand, made this cry. I hope next year to be able to obtain a longer series of these two species. This bird is apparently new to the Transvaal.

206. LANIARIUS STARKI. (Southern Grey-headed Bush-Shrike.)

(a) ♂. 16.10.06. Swazieland. Iris yellow. In stomach insects.

Only one specimen noticed, although it may be fairly common. The one I shot was in open thorn-tree country and some distance from any thick bush.

219. PYCNONOTUS LAYARDI. (Black-capped Bulbul.)

Very common: most destructive to fruit-trees. I have found them in numbers in wild fig-trees, the fruit of which they seem to be especially fond of.

296. TURDUS OLIVACEUS. (Cape Thrush.)

(a) ♀. 28.6.06. Indhlovudwalilie. Legs yellow; bill: culmen dark brown, mandible yellow. In stomach seeds.

This large Thrush is fairly common, keeping entirely to the bush; when disturbed they make for the nearest cover.

300. MONTICOLA RUPESTRIS. (Cape Rock Thrush.)

(a) ♂. 26.6.06. Indhlovudwalilie.

This handsome bird is not uncommon; it seems to be quite the reverse of shy, and is generally to be seen seated on a prominent rock or tree top.

305. MYRMECOCICHLA BIFASCIATA. (Buff-streaked Chat.)

(a) ♂. 26.6.06. Indhlovudwalilie. Iris dark brown; feet black. In stomach insects.

Very common in the more rocky parts of the district.

308. *SAXICOLA PILEATA. (Capped Wheatear.)

Fairly common. I did not preserve a specimen.

320. *COSSYPHA BICOLOR*. (Noisy Robin Chat.)

(a) ♂. 6.6.06. Indhlovudwalilie. Iris dark brown. In stomach seeds and a beetle.

Only to be found in very dense bush. When disturbed they do not appear to be particularly shy, generally hopping away from you in a leisurely manner.

323. *COSSYPHA CAFFRA*. (Cape Robin Chat.)

(a). 19.9.06. Indhlovudwalilie. Iris brown. In stomach insects.

(b) ♂. 31.7.06. Indhlovudwalilie. In stomach insects. Fairly common.

335. *LIOPTILUS NIGRICAPILLUS*. (Bush Blackcap.)

(a) ♀. 21.8.06. Indhlovudwalilie. Bill and legs pink. In stomach insects.

Rare. I only saw this Blackcap on two occasions. Although frequenting the dense bush it does not seem to be a very shy bird. The one I shot was flitting about in a large tree over my head for some considerable time before I shot it. I noticed it making little darts at insects and catching them with great rapidity from the foliage. On examination its stomach was found to be full of insects.

342. **ALSEONAX ADUSTA*. (Dusky Flycatcher.)

♂ shot on 25.8.06. Indhlovudwalilie. In stomach insects.

Fairly common in the thick bush. They are fond of sitting on dead branches of trees, from which they are not easily to be distinguished and are in consequence very hard to see, except when darting away for a second to catch some insect which is near them. They seem to frequent the same locality and almost the same tree for months at a time. I did not preserve any.

349. **PACHYPRORA CAPENSIS*. (Cape Flycatcher.)

Very common in the thick bush. I did not preserve any.

354. *TERPSIPHONE PERSPICILLATA*. (Paradise Flycatcher.)

(a) ♀. 24.9.06. Indhlovudwalilie. In stomach insects.

I think this beautiful Flycatcher is undoubtedly migratory

in this district; the first I noticed were on Sept. 24th, and after that date they seemed to arrive in numbers. They are quite plentiful now (October 5th), and had they been residents during the winter months I could not have failed to come across them.

355. DICRURUS AFER. (Fork-tailed Drongo.)

(b) ♂. 28.7.06. Indhlovudwalilie. In stomach insects.

Fairly common. They are very destructive to bees, and caused great havoc with a hive that was standing in the garden here last year; the stomach of one that was shot was found to be full of these insects. Where grass is burnt off they come to that locality, moving off as soon as fresh fires are started elsewhere.

357. CAMPOPHAGA NIGRA. (Black Cuckoo Shrike.)

(a) ♂. 7.10.06. Swazieland.

Fairly plentiful in the open thorn country, appearing to be more numerous in September and October; at this time of the year they are usually to be seen going about in pairs. They are decidedly shy and difficult to approach, but very often when disturbed they make for the thickest part of a tree and stay there.

358. CAMPOPHAGA HARTLAUBI. (Hartlaub's Cuckoo Shrike.)

(a) ♂. 27.6.06. Indhlovudwalilie. Gape yellow. In stomach insects.

Rare. I shot one specimen in thick bush—this being the only one I have seen here.

364. *HIRUNDO RUSTICA. (European Swallow.)

First observed here on August 28th, after which they arrived in large numbers.

369. HIRUNDO ALBIGULARIS. (White-throated Swallow.)

(a) ♀. 26.9.06. Indhlovudwalilie. In stomach insects.

My earliest record of this Swallow was on September 5th; they are here now in great numbers (October 4th, 1906).

374. HIRUNDO CUCULLATA. (Larger Stripe-breasted Swallow.)

(a) ♀. 18.10.06. Swazieland. In stomach insects.

Fairly common. First noticed early in September. When I left the Amersfoort district, in May 1906, a pair of these Swallows were still there—roosting by night in an outhouse.

376. *HIRUNDO SEMIRUFA*. (Rufous-breasted Swallow.)

Only a few birds seen, namely on September 30th. They seem to go about either singly or in pairs.

379. *PSALIDOPROCNE HOLOMELÆNA*. (Black Rough-winged Swallow.)

I have seen several of these little Swallows in Swaziland: as a rule they fly near trees, but sometimes they go into the open.

385. **CYPSELUS AFRICANUS*. (White-bellied Swift.)

Not common. They seem to prefer flying over rocky kopjes, sometimes at a great height. They are also very fond of flying over grass fires, no doubt with the object of catching insects.

387. *CYPSELUS BARBATUS*. (Black Swift.)

Fairly common, but not noticed before July 14th. They are very fond of flying over grass fires, sometimes dashing through the thick smoke.

410. *MELITTOPHAGUS MERIDIONALIS*. (Little Bee-eater).

(a) ♂. 18.10.06. Swaziland. Iris bright red. In stomach insects.

Fairly common. Generally to be seen along the sides of spruits and dongas. They are very quick on the wing when darting after insects.

412. **CERYLE RUDIS*. (Pied Kingfisher.)

Quite common. To be seen almost at any time "hawking" up and down the river.

413. **CERYLE MAXIMA*. (Giant Kingfisher.)

Rare: only one example seen. I followed this bird for a long distance up the river, but it was so wary that I could not get within gunshot of it. Several times it flew into the inner branches of trees along the river bed, but always went out on my approach.

414. *ALCEDO SEMITORQUATA. (Half-collared Kingfisher.)

Not uncommon on the small streams and spruits, although I have only once seen it in the large river. I did not preserve a specimen.

415. CORYTHORNIS CYANOSTIGMA. (Malachite Kingfisher.)

(a) ♀. 20.10.06. Swazieland.

Rare. Only one specimen seen and obtained by the side of a small stream.

418. HALCYON ALBIVENTRIS. (Brown-hooded Kingfisher.)

(a) ♀. 22.10.06. Swazieland.

I have only come across one specimen of this Kingfisher, but no doubt they are not so uncommon as they appear.

423 A. COLIUS STRIATUS MINOR. (Natal Speckled Mousebird.)

(a). 6.6.06. Indhlovudwalilie.

Common. A great fruit thief. I found numbers of them feeding on the wild fig-trees. When disturbed they usually fly into the thickest foliage, where it is most difficult to see them.

435. GEOCOLAPTES OLIVACEUS. (Ground Woodpecker.)

(a) ♀. 24.8.06. Indhlovudwalilie. Iris whitish yellow, tinged with red. In stomach ants and larvæ.

(b) ♂. 23.8.06. Indhlovudwalilie. Iris white, surrounded by a tinge of red. In stomach ants and larvæ.

These birds have a very harsh scraping call when frightened, and when disturbed in their burrows by footsteps above call loudly whilst in their holes. One flock of about six of these birds were inhabiting a rocky kopje on this farm for some months. In the latter part of August, thinking they were breeding, I dug out three or four of the holes they had made in the side of a donga. I found no eggs, however, and I must have caused them to desert the spot, as they were not seen again. The stomachs of two specimens shot were crammed full of ants and their larvæ. In each of the tunnels

inhabited by these birds there was a layer two or three inches deep consisting of the legs, wings, and the hard part of the head of ants. The tunnel holes, which were not always straight, were about four to five feet in length in friable clayish earth; at the end of each tunnel was a cavity about the size of a man's head.

440. *DENDROPICUS CARDINALIS*. (Cardinal Woodpecker.)

(a) ♂. 11.6.06. Indhlovudwalilie. In stomach caterpillars.

This is the most common Woodpecker in this district. I have found it both in the thick bush and in the more open country amongst the thorn-trees.

441. *THRIPIAS NAMAQUUS*. (Bearded Woodpecker.)

(a) ♀. 20.9.06. Swazieland. Iris claret. In stomach caterpillars.

The only one seen was procured; it flew past me uttering its harsh hote and settled on a mimosa-tree within a few feet of where I was standing without apparently noticing me.

442. *MESOPICUS GRISEOCEPHALUS*. (Olive Woodpecker.)

(a) unsexed. Swazieland, 26.7.06. In stomach insects.

Common in thick bush. Generally going about in small flocks of from four to eight. They are very noisy birds whilst hunting through the bush, and utter a harsh scream.

443. *LYNX RUFICOLLIS*. (South African Wryneck.)

(a) ♀. 2.10.06. Swazieland. In stomach insects.

(b) ♀. 15.10.06. Swazieland. In stomach insects.

Fairly common. From March to the end of September only one was seen, in October they arrived in considerable numbers. They generally go about either singly or in pairs. On October 2nd I saw one fly out of a hole in a tree about twenty feet from the ground where it was probably nesting, but I had no opportunity of ascertaining whether this was the case or not.

447. *INDICATOR MINOR*. (Lesser Honey-Guide.)

(a) ♂. 21.7.06. Indhlovudwalilie. Iris brown.

Not often noticed. I have only met this little Honey-Guide on two occasions : in the stomach of one was found a quantity of a yellowish substance which I should certainly say was bees-wax ; it appeared to be quite fresh and the bird had evidently only just had its meal. There were no signs of insects in its stomach.

449. *LYBIUS TORQUATUS*. (Black-collared Barbet.)

♂. 27.7.06. Swazieland. Iris reddish brown. In stomach seeds only.

Very common, not at all shy. They prefer the open thorn country to the thick bush.

450. **TRICHOLÆMA LEUCOMELAS*. (Pied Barbet.)

Not common.

466. **CHRYSOCOCCYX CUPREUS*. (Didric Cuckoo.)

A few seen in the beginning of October. No doubt later on in the summer they are more plentiful. They are frequently mobbed by small birds.

469. *COCCYSTES JACOBINUS*. (Black-and-White Cuckoo.)

(a) ♀. 17.10.06. Swazieland. In stomach insects.

Two pairs seen in Swazieland in the beginning of October, 1906. They seem to frequent open thorn country, where they are rather difficult to approach, flying from tree to tree when pursued.

493. *ASIO CAPENSIS*. (Marsh Owl.)

♂. 3.6.06. Indhlovudwalilie. Iris dark brown. In stomach nil.

Common. To be seen in large numbers in a vlei not far from the house. These Owls invariably lie hidden in the long dry grass during the daytime, there being generally six or seven together. When disturbed towards evening they are very bold and fearless, circling round overhead and alighting quite close by. As soon as the grass has been burnt off they move away to a different locality.

495. *SYRNIUM WOODFORDI*. (Woodford's Owl.)

♀. 28.6.06. Indhlovudwalilie. Iris brown ; bill and legs yellow ; claws slaty black. In stomach mouse.

Rare. Only one specimen seen and obtained. When in a patch of dense bush my attention was drawn to an Owl that was being chased by numerous small birds, chiefly Bulbuls ; it alighted in a thick tree, but although I could not see it I was aware of its presence by the angry behaviour of these small birds, which kept up a constant chattering ; on my throwing a stone into the tree it flew out to another quite close by and was shot. This bird was flying about in bright sunlight during the middle of the day. As a rule they undoubtedly keep to the thickest bush. One which I shot in the Great Letaba Valley in the Zoutpansberg flew out of a clump of banana-trees which had been allowed to grow wild, within a few yards of some farm buildings, where people were constantly passing to and fro.

497. **BUBO MACULOSUS*. (Spotted Eagle Owl.)

Fairly plentiful. When approached in the daytime they rarely move until one is within a few feet of them. On one occasion I poked one, which was sitting on a rock just above me, with the end of my gun. As mentioned by Layard, pointers will stand them like game.

498. **BUBO LACTEUS*. (Verreaux's Eagle Owl.)

I have not seen this Owl myself, but include it in the list on the authority of several reliable witnesses ; its huge size renders it not likely to be mistaken for any other species.

508. *TINNUNCULUS RUPICOLUS*. (South African Kestrel.)

(a) ♀. 5.9.06. Indhlovudwalilie. In stomach locusts and beetles.

Very common. These birds are very fond of locusts and will follow a swarm for miles ; the stomach and crop of one shot was found to be full of them. They undoubtedly do a lot of good, feeding chiefly on grasshoppers and spiders, as well as other insects.

514. *BAZA VERREAUXI*. (Cuckoo Falcon.)

(a) ♀. 26.8.06. Indhlovudwalilie. Bill black; feet dull yellow; claws black. In stomach chameleons, lizards, and large insects.

Seen on two occasions, one specimen obtained.

I do not think this rare Hawk is nearly so shy as has been represented. The first time I met with it was at Louw's Creek in the Barberton district, where I walked right underneath the large tree on which it was perched without alarming it; on my moving about in the thick undergrowth it flew out, but only went as far as the next tree, where I shot it.

Two of these Hawks were frequenting the trees around the buildings on the Tzaneen Estate in the Zoutpansberg, where there were plenty of Kaffirs about; they allowed me to approach them across an open piece of ploughed land and shoot one, after which the other bird, flying from tree to tree, made off.

In this district I came suddenly upon one seated on the top of a tree-fern within a few yards of me; although it must have seen me it did not fly away, and actually allowed me to change the cartridges in my gun before taking flight, when it was shot. On another occasion one flew into a thick tree out in the open by a disused farmhouse; here I approached the tree, and after walking round it without seeing the Hawk, threw a stone into the tree, when the bird flew out on the other side and got away. I have no doubt that they seek protection amongst the thick foliage of trees, but they are not entirely confined to the bush, as I have on several occasions found them out in the open, when they do not appear to be particularly shy. These birds have a curious musk-like smell, which I have noticed on more than one occasion.

518. *AQUILA WAHLBERGI*. (Wahlberg's Eagle.)

(a) ♂. 20.10.06. Swazieland. In stomach three lizards.

In October 1906 a pair of these birds were nesting in a high tree overhanging the Compise river. The nest was a large one some two feet in diameter, and was built of sticks

placed in a fork of the tree about 45 feet from the ground : it was thickly lined with bunches of green leaves taken from the same tree. Both birds take their share in incubating the single egg, the one not so occupied remaining within call on a neighbouring tree. The male was shot as he flew from the nest. When the sitting bird is disturbed, after circling round the tree for some considerable time, sometimes as long as half an hour, uttering a very harsh scream every now and again, it mounts in wide circles until almost lost to view; from this elevation, often at a great distance from the nest, the bird glides with outstretched wings until it is immediately over the nest, when after poising for an instant it stoops perpendicularly; so rapid is its descent that the eye can hardly follow it, apparently it checks itself without effort only on reaching the nest.

The single egg taken measures 63 mm. \times 46 mm. It is of oval shape; ground-colour dirty white; the egg is blotched sparsely with reddish-brown splashes unevenly spread and of varying size. The texture of the shell is, for an Eagle's egg, surprisingly smooth. The egg was rather dirty and more or less coloured with a reddish dyeing of what I take to be blood, particularly on one side, where it looks exactly as if some one had upset some red ink over it and then tried to rub it out.

523. *LOPHOAETUS OCCIPITALIS*. (Crested Hawk Eagle.)

(a) unsexed juv. 25.7.06. Indhlovudwalilie. Iris light yellow; feet whitish; claws black.

(b) ♂.

Rare. I first saw this handsome Eagle seated on a rock overlooking a stream; although I took at least half an hour to crawl up to it through the grass, it never moved.

The young bird had evidently been caught in a trap some time before I shot it, as the middle toes of both feet show some malformation, the claw of the right being completely reversed, whilst that of the left is double or split and about one-eighth of the proper length.

530. *ASTURINULA MONOGRAMMICA.* (African Buzzard Eagle.)

(a) ♀. 17.6.06. Indhlovudwalilie. Iris bright red. In stomach lizards. Length 15 in.

(b) ♀. 21.6.06. Indhlovudwalilie. Iris bright red. Stomach empty. Length 14 in.

Fairly common. On several occasions I have noticed these Hawks sitting either on trees or on a stony kopje near the house, waiting for an opportunity to catch young chickens. In this district it is considered to be one of the worst chicken thieves of all our Hawks. They are not shy and are generally easily approached.

531. *BUTEO JACKAL.* (Jackal Buzzard.)

(a) ♂. 27.8.06. Indhlovudwalilie. In stomach one rat, one small bird, four lizards, one chameleon, a number of small insects and beetles, and a large hairy spider.

Common. When pairing towards the end of August these large Hawks fight continually and may be seen circling round each other in the air, uttering every now and again a harsh scream which may be heard for miles. Last year two of these birds gripped one another in the air, and on tumbling down to the ground were both killed by a Kaffir in sight of the house. They may be seen seated for hours on some prominent rock on the look-out for their food, which consists largely of lizards. They are very cunning in always alighting on the highest rock, so that nobody can approach them without being seen. I have noticed them circling round and round over grass fires, sometimes dashing right through the thick smoke. As they have a habit of sitting on prominent posts or fencing poles, the Swazies set iron traps for them in these places, often with success.

533. *BUTEO DESERTORUM.* (Steppe Buzzard.)

(a) 10.10.06. Swazieland.

Two or three seen about the middle of October. A great chicken thief, very bold and fearless when hungry. I have seen this bird flying round within a few yards when the fowls

were being fed. On one occasion it darted down and catching a chicken made off before a gun could be procured.

534. *MILVUS ÆGYPTIUS*. (Yellow-billed Kite.)

(a) ♀. 22.10.06. Swazieland.

Occasionally seen and obtained. No doubt there are more in the district later on during the summer months.

536. *ELANUS CÆRULEUS*. (Black-shouldered Kite.)

(a) ♀. 26.9.06. Indhlovudwalilie. Iris bright red. In stomach two rats.

Common. I do not think this harmless Kite ever touches chickens, its food consisting chiefly of lizards and rats; two of the latter were found in the stomach of one shot. In this locality they remain all through the winter from May until October.

540. *ACCIPITER RUFIVENTRIS*. (African Sparrow-Hawk.)

(a) ♀ juv. 26.9.06. Indhlovudwalilie. Iris yellow. In stomach two small birds.

(b) ♀. 3.10.06. Indhlovudwalilie. Iris bright yellow. In stomach one rat.

Several times I came across this Hawk in the thick bush, where it flies between the trees with the greatest of ease. I found it nesting in the beginning of October: the nest was placed in a fork on the top of a tree about twenty feet high; it was built of sticks and thickly lined with lichen, evidently taken from a neighbouring tree. This lichen, which was very long, hung down so as to nearly cover the outside of the nest, giving it a green appearance. The plumage in (a) is very instructive; the chin and chest-feathers show the dark brown shaft-stripes well marked, but there is no trace of cross-barring on the breast, abdomen, or flanks.

543. *ASTUR TACHIRO*. (African Goshawk.)

(a) ♂. 21.6.06. Indhlovudwalilie. Iris light yellow; legs yellow. In stomach mouse.

Rare. The only one seen was procured when seated on some trees quite close to the house, where it was apparently watching for chickens. They are said to be very destructive to poultry.

553. CIRCUS RANIVORUS. (South African Harrier.)

(a). ♂. Length 21", exp. al. 47". Legs light yellow. Swazieland. 22.6.06.

Not common. I disturbed one of these Harriers when eating something in the grass, when it flew round and round at a great height for some minutes, and was shot on returning to the spot from whence it rose.

554. POLYBOROIDES TYPICUS. (Harrier Hawk.)

(a) ♀. 6.10.06. Indhlovudwalilie.

(b) ♀ immature. 17.10.06. Swazieland.

Fairly common at times, though I never noticed it until late in the winter. This Hawk is a great chicken thief, though it is so shy and wary that it seldom approaches farm-buildings, but does great damage near Kaffir kraals. I think it is the most difficult to get near of all our Hawks; on several occasions directly I came within sight of one of these birds it made off. They are very tenacious of life, and although badly wounded will generally make off to some trees as long as their wings are intact. I have noticed this on several occasions: one example which I shot in this district although coming down to the ground when hit with buck-shot, managed to rise again and flew off to the bush, apparently none the worse; next day, however, it was found hanging dead in the boughs of a large tree.

555. *GYPS KOLBII. (Kolbe's Vulture.)

These birds have been known to breed on a rocky precipice overhanging the Compies river for the last twenty years. I found a fully fledged young one in the middle of July when several pairs appeared to be breeding. Towards evening about fifty of these birds may be seen sailing along one after the other to their sleeping-place, sometimes flying close to the ground and sometimes at a great height.

They are a great nuisance to the sheep-farmer. Several full-grown sheep and lambs were killed on this farm during the lambing-season. On one occasion four or five of these birds attacked a sick sheep and killed it before the herd boy

could get up to them ; on being frightened off they attacked another sick sheep some five hundred yards off, and again killed and partly ate it before they could be driven off.

First the eyes and then the tongue of the sheep are picked out. In the Amersfoort district I knew a case in which two healthy full-grown Merino sheep were attacked and killed. These birds, although useful scavengers in devouring dead animals such as horses and cattle, are a serious menace to the sheep-farmer. During the war they increased very rapidly, and the wastage of stock supplied much food : the supply of dead animals is now much less ; game has also been driven away by civilization, and the bad habits to which these birds are taking are probably due to a shortage of their normal food-supply.

563. *SERPENTARIUS SECRETARIUS*. (Secretary Bird.)

(a) unsexed. 5.7.06. Indhlovudwalilie. Length 51", exp. al. 74". In stomach two large rats, one small snake, two chameleons, and three lizards.

Fairly common. They are generally difficult to approach, although the one I shot allowed me to crawl up to it through the long grass to within a distance of about 15 yards ; it evidently heard me coming, and stood looking in my direction, appearing to be more curious than frightened. I notice that the wing is spread out as a shield on all occasions when they are catching their food, and not only when snakes are attacked.

564. *PHALACROCORAX LUCIDUS*. (White-breasted Duiker.)

(a) ♀. 8.6.06. Indhlovudwalilie. Iris light green. In stomach fish.

Not common. A fair number frequent the river. I watched one of the Cormorants for some time on one occasion and was struck by the great ease with which so large a bird dives and splashes about in the water ; at times it would swim round and round in a circle, generally ending up with a dive. Two large fish about 8 inches long were found in the stomach of one shot. Sometimes these birds may be seen flying up and down the river at a great height.

568. PLOTUS RUFUS. (Snake Bird.)

(a) ♂. 17.7.06. Swazieland. In stomach fish.

(b) ♀. 15.6.06. Indhlovudwalilie. Iris yellow. In stomach fish.

Fairly common along the banks of the Compies river.

In three of these birds which I have skinned I have found the whole throat and the upper part of the stomach covered inside with countless numbers of worms : these parasites are about an inch in length and very thin. It is most surprising how these birds can live in such a state. In one specimen I found the worms in great numbers at the back of the mouth and under the tongue. They seem to be much more easily approached in this district than in the Great Letaba Valley in the Zoutpansberg, where I found them very shy. When wounded, they immediately dive and are not seen again ; probably they take shelter under the reeds by the side of the river.

584. SCOPUS UMBRETTA. (Hammerkop.)

(a) ♀. 3.6.06. Indhlovudwalilie.

Common. A very tame bird ; one was shot whilst feeding in the water-furrow a few yards from the house. In October 1906, I came across a nest, on a rock in the middle of a small stream, without eggs, which was composed entirely of mealie stalks. It was most surprising how a bird of this size could carry such a load to its nest. Two pure white eggs were taken from a nest near Amsterdam on September 9th.

605. *GERONTICUS CALVUS. (Bald Ibis.)

Plentiful, generally to be seen going about in small flocks of from three to six. They breed regularly on a ledge of a krantz overhanging the Compies river : they also breed near Amersfoort on the High Veld. A flock when disturbed usually rises in circle to a great height before making off.

606. *HAGEDASHIA HAGEDASH. (Hadada.)

Common. Far more easy to approach than the preceding species, although at times they are very shy. Usually to be found in swampy places. I did not preserve any.

On November 29th, in the Amersfoort district, a fully-fledged young one (now in the Pretoria Zoological Gardens) was taken by a Kaffir from a nest, containing two birds, placed in a willow-tree overhanging a small spruit. Previous to this the same nest had been robbed of three eggs.

I did not see the nest myself.

613. *SARCIDIORNIS MELANONOTA. (Knob-billed Duck.)

Rare. A few stragglers seen flying over, probably on their way to the more suitable "pan" districts of Lake Crissie.

In the Amersfoort district (S.E. Transvaal) they are resident, and breed regularly during the months of November and December, making a nest in the long grass, usually at the side of a vlei or near a pan. In one instance on the farm Rolfontein they used to nest amongst the stones on a low-lying kopje, but of recent years have been too much disturbed in this locality, and apparently no longer breed there. They are very destructive to lands freshly sown with mealies or oats, rooting up the grain and doing much damage. A few months ago, in the Ermelo district, four of these Ducks were caught in traps put into a patch of forage for this purpose. I have seen them in great numbers on the Que Que river in Matabeleland, where they are migratory, arriving in September and staying all through the rainy season. In Rhodesia I have noticed them flying in small parties often at a great height, but this is probably when they are migrating or changing their feeding-ground.

I am told that when they change their plumage in the spring they lose nearly all their feathers at once, and when in this state, being unable to fly, are frequently caught.

620. *ANAS SPARSA. (Black Duck.)

Fairly common. These birds seem to prefer the smaller rivers, where there is more cover, and where they are less likely to be seen than in the larger ones.

I have shot but not preserved them.

631. **COLUMBA PHEONOTA*. (Speckled Pigeon.)

Common amongst the krantzies overhanging the Compies river, where they nest. I have seen them in considerable flocks of over fifty. I have shot them occasionally, but never troubled to preserve them. They are excellent eating.

632. *COLUMBA ARQUATRIX*. (Olive Pigeon.)

♂. 28.6.06. Indhlovudwalilie. Iris slaty grey, bill and legs bright yellow. Stomach contained wild figs and seeds.

Very local. A flock of these birds frequented some fig-trees in the thick bush for some time, but moved off again after being there about a fortnight and have not been seen since.

They appear to be very tame, and when disturbed in the bush only fly from one tree to another. On one occasion when shot at they only flew about twenty yards into another tree. They seem to be particularly fond of the fruit of wild fig-trees, and whilst in the district could always be found on these trees. The Swazie doctors value this bird greatly for medicine, pounding up the heart into a powder. They are very good eating.

638. **TURTUR SENEGALENSIS*. (Laughing Dove.)

Abundant: far the commonest Dove in the district. I found them nesting early in May.

647. **FRANCOLINUS COQUI*. (Coqui Francolin.)

Not at all common. Generally found inhabiting stony kopjes. As a rule, they lie very close and are hard to flush.

650. *FRANCOLINUS LEVAILLANTI*. (Cape Redwing.)

(a) ♀. 18.6.06. Indhlovudwalilie. Iris brown. Stomach contained seeds.

(b) ♂. 16.6.06. Iris light brown. In stomach seeds and insects.

Common. These birds are entirely confined to the most rocky kopjes, and, as far as I know, are never to be found in the more open veldt, where I have often looked for them. However, they often go into the thick bush, and when

flushed after a short flight drop suddenly into thick cover. When found on rocky ground they are very difficult to flush, and I know of one instance where one was picked up by a shooter under his pointer's nose. They feed a great deal in old mealie lands by the side of the bush, and are generally to be found in coveys of from six to ten.

660. *COTURNIX AFRICANA. (Cape Quail.)

Never seen in large numbers, but a few odd birds have been here the whole winter. Their favourite haunt is in a vlei or by the side of a spruit. I have shot but not preserved them.

686. PODICA PETERSI. (Peters' Fin-foot.)

(a) ♀. 5.7.06. Indhlovudwalilie. Length $22\frac{1}{2}$ " , exp. al. 24". Iris pale yellow : legs bright orange-red ; bill : culmen and upper beak black shading into horn-colour at tip ; upper portion of upper beak orange-red at gape, shading past the nostril to brownish horn : mandible reddish orange. Stomach contained two fish.

(b) ♀. 14.7.06. Indhlovudwalilie. Length $22\frac{1}{2}$ " , exp. al. 25" , wing 8" . Iris brown. In stomach two water-crabs, a fish, and three water-beetles.

Rare resident. Two specimens only were seen and both were procured. Both these were females, each having the white stripe down the side of the neck.

I first noticed one of these birds through my glasses and saw it swim across the Compies river from one clump of reeds to another ; it was swimming with its body above the water just like a duck, nodding its head as it swam. I found it exceedingly difficult to flush, and it was not until I had gone up and down the reed-bed three times beating with a stick that it flew out, flying along the surface of the water like a Waterhen. The second specimen I also observed swimming in a similar manner. One of the fish in the stomach of (a) was quite six inches long.

688. *TETRAPTERYX PARADISEA. (Blue Crane.)

Not common near Amsterdam, but I saw one pair near

that place, where they breed in September. They are more plentiful amongst the swamps and pans of the Lake Crissie district.

697. OTIS MELANOGASTER. (Black-bellied Knorhaan.)

(a) ♂. 2.10.06. Swaziland. Length 27", exp. al. 50", wing 15". In stomach insects and vegetable matter.

Rare. Only one seen and obtained. This bird appeared to be quite tame. I was riding home on horseback and when it was almost dark I came across this large Knorhaan walking about within a few yards of the road. Thinking it was one of the common species I rode past it, but then seeing what it was I dismounted and badly wounded it with no. 12 shot; it thereupon rose, but only flew about fifteen yards, when I again shot it. The whole time it never appeared to show the slightest sign of fear.

700. OTIS BARROWI. (Barrow's Knorhaan.)

(a) 15.7.06. Amsterdam.

I saw four of these birds together by the side of the road; three ran, but one squatted very close and I obtained it. This is the only occasion upon which I have observed this species.

701. *OTIS KORI. (Gom Paauw.)

Common. Sometimes these large Paauw are very tame and will allow an approach within a few yards, especially if on horseback. They run with extraordinary rapidity, and I have chased one for a considerable distance with my horse at a sharp canter without its taking to flight.

702. *ÆDICNEMUS CAPENSIS. (Dikkop.)

In suitable localities these birds are fairly common. They are very noisy towards evening and somewhat restless, usually making short flights of about two hundred yards or less every now and again. In September seven of these birds were seen together on a stony kopje—where they hid until I got right up to them. Their colouring is so protective amongst stones that when they squat down and keep motionless it is very difficult to see them.

706. CURSORIUS TEMMINCKI. (Temminck's Courser.)

♂ . 3.8.06. Indhlovudwalilie. Stomach contained insects.

Fairly common. They appear to be migratory, arriving in this district about the beginning of July. They are fond of patches of veldt where the grass has been burnt off, and a pair having once chosen a spot to their liking, appear to remain there as long as they are in the locality.

711. GLAREOLA MELANOPTERA. (Nordmann's Pratincole.)

(a) ♂ . 8.10.06. Indhlovudwalilie. In stomach insects.

Only one troop of these birds was seen, early in October. When seen there were no locusts about and they seemed to be catching insects in the air just as Swallows do. They were quite tame, often dashing past within a few yards of my head.

752. GALLINAGO NIGRIPENNIS. (Ethiopian Snipe.)

(a) ♂ . 27.7.06. Indhlovudwalilie. Iris dark brown. Stomach contained grubs and large number of small stones.

Not common; only one specimen seen and obtained, though no doubt there were more in the locality. When flushed this Snipe only flies a short distance and settles again.

721. STEPHANIBYX MELANOPTERUS. (Black-winged Plover.)

♂ . 29.7.06. Indhlovudwalilie. Iris yellow; eyelids scarlet.

These birds are fairly common in this locality. They are very fond of large patches of burnt veldt, which they come to directly it has been burnt, staying there for some months and breeding in the same spot.

Two clutches of eggs taken consisted of three, the other of four eggs. The nest, if such it may be called, is a mere scratching in the ground thickly lined with dry sheep's droppings and a few small pieces of burnt stick or grass. The nest is placed right out in the open on the burnt veldt, where it is very hard indeed to find.

When the female is sitting the male bird is generally close by within a few hundred yards, and on being disturbed always takes to wing at once, and after circling round once or twice

flies right away ; the female, on the other hand, rarely takes to flight when disturbed from her nest, but runs away for some ten or twenty yards, then stands looking at the intruder before making another short run and again standing still. When riding I have followed a female I disturbed from her nest for several minutes without her taking to flight, she allowing me to approach within a few yards of her. Occasionally, however, the female when frightened from her nest takes at once to flight, uttering a piercing cry, and is at once joined by her mate; the pair fly round for a short time, after which the female drops to the ground again and anxiously watches the intruder. They are very pugnacious when nesting. If any sheep or a dog approach their nest, both birds rush at them with outstretched wings trying to frighten them away. In the breeding-season they are very noisy at night.

This bird is apparently new to the Transvaal.

As I am unable to find that the eggs of this species have been carefully described, I venture to give details.

The three clutches were all taken on the farm Indhlovdwalilie.

Clutch A. Three eggs, Sept. 1st, 1906. Slightly incubated. Presented to Natural History Museum, South Kensington.

Clutch B. Three eggs, Sept. 18th, 1906. Partially incubated. Presented to Prof. Alfred Newton, Cambridge University Museum.

Clutch C. Four eggs, Sept. 14th, 1906. Slightly incubated. Presented to the Transvaal Museum, Pretoria.

In shape, size, and colouring these eggs are precisely what might have been expected.

The three clutches vary slightly, but the eggs in each clutch are extraordinarily similar.

Maximum length 43·9 mm. ; minimum length 42·9 mm.

Maximum breadth 31·0 mm. ; minimum breadth 29·6 mm.

Mean length of the ten eggs 43·36 mm.

Mean breadth of the ten eggs 30·36 mm.

The eggs are of typical ovate pyriform shape.

In clutch A the ground-colour is warm yellowish light brown, the shell of smooth texture. The eggs are thickly

covered with surface and underlying blotches of varying shades of sienna-brown, many of which are confluent.

In clutch B the ground-colour is heavily tinged with a pale olive-green; the texture of the shell is similar to that of clutch A.

The eggs are much more thickly blotched than in A, and in one egg of this clutch the blotches are much smaller.

In clutch C the ground-colour is much lighter, being almost fawn. The texture of the shell is coarser.

The blotches are rather bolder than in either of the two other clutches.

739. *TOTANUS NEBULARIUS*. (Greenshank.)

(a). ♀. 4.6.06. Swaziland. Iris dark brown. Stomach, small fish. Rare.

V.—*Some additional Notes on the Birds of the Kroonstad District, Orange River Colony*. By EDMOND SYMONDS, L.R.C.P., M.R.C.S.

555. *GYPS KOLBII*. (Kolbe's Vulture.)

This Vulture is very common in the O.R.C., and I can remember, while shooting in the seventies and early eighties, that as soon as a buck was dropped—though not a sign of a bird was visible in the sky—Vultures would shortly be seen circling round at a distance. Before the buck was properly cut open and its entrails and head removed, they would be flying round close by; and one had only to leave the remains a short distance away, when they pounced on it. One belief common in those times was, that if you took the head (after removal from the carcase), stuck the horns firmly in the ground, and left it there with grass in the mouth, no Vulture would touch it: this I have seen myself, though they gorged on the entrails close by.

I have also seen them (one or two) watching a ewe lambing. The ewe was well aware of their intentions, and would stand facing them until the lamb could follow her, when the "Aasvogels" would fly away.*

On attacking a carcase, they apparently prefer the eyes

* [They seem to be bolder nowadays.—EDD.]

first and then the anus ; and the power of their beaks in holding on to large pieces of flesh is enormous. During the "rinderpest" I saw them gorging themselves on carcasses to such an extent that they could only just waddle down to water, have a drink, and then vomit everything up ; afterwards returning to the carcase and gorging themselves again. I have caught them when so gorged : but although one can pull their long wing-feathers and tail, one must avoid their beaks, as they turn with ferocity, and a bite from their powerful beaks—quite apart from the fact that they feed on carrion, and the consequent danger of blood-poisoning—would be far from pleasant. I can remember a case many years ago of a man in the Orange Free State riding alone through the veld when his horse fell partially on him and broke his leg. The horse ran away ; and the man with his broken leg could naturally not follow or catch the horse, so had to lie still in the scorching hot sun. It was not long before the Vultures began gathering round him, and naturally his feelings were far from pleasant. He stayed a day and a night in the veld ; and the following morning an old Boer, seeing the Aasvogels in numbers, rode up to see what was dead and found the man practically in a dying state, but was just in time to rescue him from a cruel death. This I had from the man himself, who said he would never forget the agony he went through, unable to move, with those huge birds watching all round him, waiting, as he thought, to pick out his eyes.

As far as I know, they build only in krantzies *, and their great breeding-home is Aasvogel Kop, near Zastron, O.R.C. I have never seen their nests in trees, like the Black Vultures' (*Otogyys auricularis*).

The expanse of wing is very large. One I shot near the Vaal River measured over 7 feet from tip to tip of wing spread out. They have some very pretty white downy feathers, which would be suitable for ornamental purposes ; but I have never been able to eradicate the smell of carrion.

* [They are reported as nesting in trees in the Pretoria District Transvaal.—EDD.]

558. OTOGYPS AURICULARIS. (Black Vulture.)

This Vulture is only seen here, as far as my experience goes, in pairs. They may be seen feeding on a carcass whilst *Gyps kolbii* stands looking on. Once, when trying to stalk them, I saw a fine Tawny Eagle (*Aquila rapax*) feeding at the same time; but although I fired both barrels at the Eagle as he rose, I failed to get him. On account of his feeding alone, and the Common Vulture holding aloof, *auricularis* is often called the "King Vulture." I have seen their nests on mimosa-trees; but as the nests are of large diameter (about 4 feet), and built of very fine thorny sticks on the top of these very thorny trees, they are difficult of access. The only egg I have ever obtained was one from such a nest near here, and identified by seeing the old bird on the nest. The egg was large, whitish and streaked or faintly blotched with a reddish-brown colour. Unfortunately the egg was broken and could not be saved, as the difficulty of reaching the nest and getting away again with the egg was too much for my very intelligent coloured boy. The markings on the egg were mostly on the large end on this specimen. There is only one nest I have ever seen—namely, that of the Secretary Bird—the diameter of which must have been greater. I have never been able to shoot one of these birds, as they are very wary while feeding and sit close on their nests. I used to see two nests in the vicinity of our town, but during the war the trees were cut down, and the nests are therefore no more there.

563. SERPENTARIUS SECRETARIUS. (Secretary Bird.)

This bird is protected in the O.R.C., and I have never shot one, but have seen them frequently on the veld. As far as my observations go, they live on locusts, lizards, and young birds. I have never seen one attack a snake, though I have carefully watched them. A pair had a nest not far from my house: a gigantic structure on a low thorn tree, loosely put together, and, although on a low tree, inaccessible without a ladder. I do not think the nests are lined, as one can see through them. I have never found any skulls or bones

outside the nests, as is generally the case round Eagles' nests. They are usually seen in pairs on the veld, and they run some distance (with wings outspread), at a considerable speed, before they start flying.

553. *CIRCUS RANIVORUS*. (South African Harrier.)

I obtained a specimen of this Harrier in a vlei in this district in 1892 ; it is not common, so far as I know, and I know little or nothing of its habits. Perhaps the droughts of late years have made it scarce, as all our pans and vleis have been dried up.

TRICHOLEMA LEUCOMELAS. (Pied Barbet.)

I have been watching these birds for some weeks, and have sent to the Transvaal Museum a branch of a tree (willow) with the young birds. What is well marked is the different attempts at starting a hole for the nest, apparently due to their not finding a suitably soft enough place in the wood.

Since then I have taken another nest in a large branch of dead willow ; and as I had carefully watched the bird make his nest—that is, pick it out with his beak,—and have since taken the eggs and the old bird, it is sufficient proof that the Barbets make their own nests in the old rotten wood of a willow tree, and do not use the holes made by other species. The eggs (two in number) were pure white with a pinkish tinge, perhaps due to the yolk of the egg ; *not* rough, and with no spots or markings. As I had daily watched this nest, I think my remarks can be taken as accurate. I am sending the branch of this tree, with the eggs, to the Transvaal Museum. We have at least ten or twelve more nests of the same bird in the neighbourhood, but most of them inaccessible, and not to be distinguished from *D. cardinalis* (Cardinal Woodpecker) unless the bird is seen and watched.

270. *PRINIA FLAVICANS*. (Black-chested Wren-Warbler.)

I had a nest of this pretty little bird in my hedge in front of my verandah last year. I watched them building, with a lot of fine grass, a perpendicular oblong-shaped nest, with the

entrance at one side. When I thought they must have laid all their eggs I cut the branch in the hedge and brought the nest into the dining-room, intending to catch the old birds in the morning ; but my wife, on looking at the eggs early the next day, found one of them chipped : so we replaced the nest, and were very pleased to see the old birds take to it again. Eventually they raised the brood of four, and we always watched their comings and goings in the afternoon. They would fly so close to us that we could see the food in their beaks—generally small green caterpillars of, I suppose, the common cabbage white butterfly. They became very tame and did not mind any of us. When the young began to leave the nest there was a great commotion : the old birds called and twitted incessantly, especially to one weak one, which got on the ground and could not rise again ; so we picked it up and put it in the nest, being afraid of the cats. The others all slept happily in the hedge that night, and the next morning took their departure, including the weakly one. This year they are building again, but I have not yet found the nest.

681. *GALLINULA CHLOROPUS*. (Moor Hen.)

Very common in all the pans in this district, and very tame. It is rarely shot, as its edible qualities are not of the best unless skinned.

683. *PORPHYRIO MADAGASCARIENSIS*. (King Reed-hen.)

This beautiful bird—the “*Konig Reit-baan*” of the Boers—is common in wet seasons. One year they were in this district in large numbers ; there had been heavy rains, and I put up many of them in a large vlei while walking-up snipe. The water was shallow and the grass very long. They do not rise unless one is almost over them. Their flight is heavy ; but they must be able to fly long distances, as they disappear in dry seasons.

687. *BUGERANUS CARUNCULATUS*. (Wattled Crane.)

Some years ago I knew of a pair of these birds on a large pan (“*Trutersdal*”) in this district, and they nested on a

small island of reeds for some years, as they were never molested. There was also a pair at a pan on the farm Leeuwkuil, Kronstad. These also nested in the reeds; but, alas! both these pans have been dry for some years, and the reeds have been destroyed. I could often have shot them, but never in any way interfered with them; and the old "Boer" looked upon them with a certain amount of reverence, and was proud of seeing them stalking about in a most stately manner. Their antics in the breeding-season were decidedly ludicrous.

688. TETRAPTERYX PARADISEA. (Blue Crane.)

This Crane is very common here, and is found in flocks of almost one hundred, and they do great damage in the newly-sown mealie-fields. They are very wary and can only be shot with a rifle. The young ones are often caught and brought up on a farm.

689. BALEARICA REGULORUM. (Crowned Crane.)

This most handsome bird was at one time not uncommon here, but since the droughts of the last three years I have seen very few. I had a tame pair for a couple of years, and they would come to be fed when called; but they were often very troublesome, and had to be shut out of the room at meal-times, as they would walk round the table and snap anything off one's plate with considerable smartness, and then trot off making a sort of croak or chuckle. Unfortunately, they both came to an untimely end.

I have seen them in a troop of ten or twelve, but only in the winter.

I think this bird should be protected, as it does no harm and is frequently destroyed in a wanton useless manner.

701. OTIS KORI. (Gom Paauw.)

This fine Bustard is rarely seen here now, though it was never very common. I once saw a pair in captivity, and grand birds they were; the male had a way of ruffling-out his neck-feathers in great style.

I have never yet seen one shot that weighed 30 lbs.; but

the late Mr. Edwards, of Dreifontein, Dist. Heilbron, O.R.C. (a good sportsman), told me he had shot one which weighed over 30 lbs.

696. OTIS CAFRA. (Stanley Bustard.)

This bird is fairly common in this district at certain times of the year, especially in August, when the veldt has been burnt. They require a very good shot to kill them outright. I remember killing three one afternoon, with a Martini-Henri rifle : two dropped stone-dead, but the third, raked through from stern to bow, flew about 1000 yards and then fell dead.

694. OTIS VIGORSI. (Vaal Knorhaan.)

This Bustard is common here, and easily shot if one only circle round with the eye fixed on the spot where it squatted. If that spot is lost, the odds are that the bird will be lost. The beautiful pink tinge of the underparts is very interesting, as the colouring fades quickly after death.

699. OTIS CÆRULESCENS. (Blue Knorhaan.)

We have many of these fine birds, especially on certain farms. On one large block of ground, where the White-tailed Gnu still roams, they were very numerous, as old Piet Terblans would allow you to shoot a Wildebeest for money, but you were not allowed to shoot a "Blaanw Knorhaan." Having often shot on his farm as long ago as 1880, I knew his peculiarity ; and the birds were fairly plentiful. Why are they almost always found in threes and fives? They are often easy of approach by circling round them, and if one is dropped and left on the ground the others will not go far away, and one can bag the three or five if only the gun is held straight.

692. OTIS AFROIDIS. (White-quilled Knorhaan.)

This is our commonest Bustard and affords good sport, but will ruin dogs by its running propensities, and if winged or wounded in long grass is most difficult to find and bag.

708. *CEDICNEMUS CAPENSIS.* (Dikkop.)

I think this bird (sometimes called "Commando Vogel") is migratory, as sometimes it is plentiful and at other times absent; it is also sometimes observed in small troops, and on other occasions in pairs. Their artfulness in running in the bush and flying when they have a bush between them and the gun is marked.

711. *GLAREOLA MELANOPTERA.* (Nordmann's Pratincole.)

This most useful and interesting bird has been much in evidence this year, presumably from the enormous swarms of locusts, unfortunately so common and destructive this year (1906). There is little more to be said about the flocks of this species than is so ably described by Sharpe and Layard; but they do not mention the appearance of the flocks when seen at a distance, almost like a cloud in ever-changing form and colour, now black, then almost invisible, then flashing white, and again into black.

The following may be of interest. A clergyman observed them, and called my attention to the peculiar "cloud," and on my telling him it was a swarm of locust-birds, he ridiculed the idea. Eventually we got near enough to see them distinctly; but he refused to admit that it was the same "cloud" we had seen before, and as he would not say "Mea culpa; confiteor," I did not say "Absolvo te."

The wonderful evolutions of these birds gyrating in the air and when after a swarm of locusts, is a beautiful sight to watch; and the way they dart into a swarm, and make wings and legs drop to the ground while devouring the bodies, is really marvellous: and the locusts seem to know their enemy, for they fly for all they are worth and do not seem to dream of stopping while the flock of birds are after them. I believe the birds are equally effective after "voet-gangers," but I have not seen this myself.

705. *CURSORIUS RUFUS.* (Burchell's Courser.)

Common along the roads in this district. They breed early in the spring, and the young ones are seen running

after the parents, but if chased they suddenly squat down behind a tuft of grass and are only found with difficulty. Some say that the early appearance of the young indicates an early season. That there may be something in this is probable, as I have noticed when birds like *Coliopasser procne* don their courting garb early it means early rains, and *vice versa*. The same applies to the Red Bishop Bird. I have never succeeded in raising these Coursers in captivity.

706. RHINOPTILUS AFRICANUS. (Two-banded Courser.)

The same remarks apply to this Courser as to Burchell's, though I think they are not so common here, and I have never seen either in flocks.

728. ÆGIALITIS TRICOLLARIS. (Treble-collared Plover.)

This pretty little Plover is common about here, and is seen alongside roads, near to water, and in drifts, &c. I have often found the nest alongside a road in any depression suitable; the bird betrays herself by standing up off her nest and scratching the ground, then dropping over her eggs, and even when the spot is carefully marked one may stand over the nest and not see the eggs. The eggs are large for the size of the bird, and very prettily marked to suit the ground on which they are laid.

719. HOPLOPTERUS ARMATUS. (Blacksmith Plover.)

This rather handsome bird is very common here, never in large numbers, but in pairs, and when a "shooter" is lying wait for duck at a pan or dam have a most annoying manner of hovering over him and screaming to tell all the wild-fowl he is there. I think it must be a rather pugnacious bird by its behaviour, and the sharp-pointed black spur on its wings could hardly be there for ornament; but so far I am not aware of its enemies—except man, when he is duck-shooting.

609. PHENICOPTERUS ROSEUS. (Greater Flamingo.)

I have seen these birds in wet seasons on the pans and vleis of this district, particularly on the large dam of the Lacc Diamond Mine. Formerly they were common every year on

the Groot Riet pan ; but as this pan has been dry for over three years, they have been absent. I have noticed them at nearly all seasons of the year, so long as the pans or dams have plenty of water, but have never heard of any breeding here. The largest number I have seen in one flock is thirty. They are very wary, and can only be shot, as a rule, with a rifle. As far as I know, I have not seen *P. minor*.

608. PLATALEA ALBA. (Spoonbill.)

This bird is fairly common in rainy seasons, when dams and vleis are full, but very sly and difficult to approach. The description of them as being "white" is very complimentary, as the few I have seen should have the adjective "dirty" applied to them. I have never known them breed in this district.

736. NUMENIUS ARQUATUS (?). (Curlew.)

I saw one specimen shot on the dam at the Lacc Diamond Mine, but was unable to identify it with certainty. It is very sly. There were ten or twelve of them on the dam, and their cry reminded me of those at home. I tried to get a fresh specimen, but was unsuccessful. This is the only time I have noticed these birds about here ; and after thirty years' shooting in the district, it is the only occasion on which I ever saw them (*i. e.*, 11.10.1898), and have not seen them since.

VI.—*Notes on some Birds observed during a Shooting-trip in Portuguese East Africa.* By DR. GEORGE TURNER, Medical Officer of Health, Transvaal.

THE course taken was down the Inkomati River. An account of the expedition will be found in the "Occasional Notes" of this number (p. 119).

1. LAMPROTORNIS MEVESI. (Meves's Glossy Starling.)

I shot a specimen at M'Karu on July 17th, 1906. The feathers of the tail and also the primaries and secondaries, especially the latter on the inner web, have much curious reflected colour.

2. *CERYLE RUDIS*. (Pied Kingfisher.)

These birds are very numerous on the Inkomati, Sabie, Tswali, and the Manzi Mhlope Rivers. The description of their habits given in Stark and Selater's 'Fauna of South Africa: Birds,' vol. ii. pp. 75 & 76, is wonderfully true to nature.

3. *ISPIDINA NATALENSIS*. (Natal Kingfisher.)

Fairly common on the Inkomati in the Maguda and Maniça districts.

4. *INDICATOR SPARRMANI*. (Sparman's Honey-Guide.)

My boys used to follow birds of this family (but I am not absolutely sure if of this species) in Sabie and Maguda and took a good deal of honey. The honey was sweet but flavourless.

5. *CENTROPUS BURCHELLI*. (Burchell's Coucal.)

I shot a specimen of this bird on July 13th, 1906, at M'Karu, Maguda. It got up out of high grass quite close to me.

6. *SCHIZORHIS CONCOLOR*. (Grey Lourie.)

I found this bird on the Inkomati River, and shot it at Kilometre 53 on June 5th, 1906. It has a cry like a cat. It has a peculiar way of balancing itself on a branch, jerking its head and tail backwards and forwards just like a toy bird moved by a swing weight. I found it a great nuisance when hunting Impala and other Buck, as it calls whenever it sees one, and the cry seems to alarm the game.

7. *PŒOCEPHALUS FUSCICAPILLUS*. (Brown-headed Parrot.)

Shot 2nd July, 1906: Inkomati.

8. *PHALACROCORAX AFRICANUS*. (Reed Duiker.)

I shot a young bird on July 27th, 1906, four hours east of Maguda. My friend cooked and ate the bird and liked it. I tasted a slice off the breast: it was certainly preferable to sea-duck, and, I think, if properly cooked, would be nice eating: flesh firm and dark and a slight, by no means unpleasant, bitter flavour. Iris ashy brown.

9. PELECANUS ROSEUS. (Eastern White Pelican.)

I met some of these birds off Xefnia in Delagoa Bay and in Lake Tswali on the border of Gazaland. I only shot a few in the Tswali in August 1906, but I was told that in a month or two the birds would be on the lake and on the Manzi Mhlope in great numbers.

10. EPHIPIORHYNCHUS SENEGALENSIS. (Saddle-bill or African Jabiru.)

This bird did not seem difficult to approach. I shot at one with a rifle at about 100 yards, and again with shot as it flew. It only went about 400 yards and then settled, and I shot it with swan-shot at about 100 yards. Next day I shot another at 150 yards with a rifle. In the specimen which I shot in June 1906 a few miles above Sabie, on the Inkomati River, the two small dependent fleshy lappets were lemon-yellow, and not nearly so large as depicted in Selater's work (vol. iv. p. 44). I did not notice any bare bright crimson spot on the breast. The wings stretched $8\frac{1}{2}$ feet. The nails resemble human nails in a most remarkable degree. The bill from base to tip measured $14\frac{1}{2}$ inches.

The above remarks are substantially similar in the case of another specimen shot subsequently at Tswali.

11. ARDEA GOLIATH. (Goliath Heron.)

I shot a specimen of this bird on the outlet of the Manzi Mhlope into the Iswali on August 14th, 1906.

12. ARDEA PURPUREA. (Purple Heron.)

I shot these birds on the Inkomati River on the 16th, 17th, and 18th June, 1906, as food for my native boys.

13. IBIS ÆTHIOPICA. (Sacred Ibis.)

I shot many of these birds on my trip, which were eagerly eaten by the Kaffirs.

14. HAGEDASHIA HAGEDASH. (Hadadah.)

I shot one of these birds on the Inkomati River two hours east of Maguda; it was excellent eating.

15. PLEGADIS FALCINELLUS. (Glossy Ibis.)

I shot one on a vlei near Lake Tswali in August 1906.

16. PHŒNICOPTERUS ROSEUS. (Greater Flamingo.)

I did not see any of these birds, but I was informed that they are very numerous on the Tswali and Manzi Mhlope in the summer.

17. PLECTROPTERUS GAMBENSIS. (Spur-winged Goose.)

I shot these birds at Manzi Mhlope in August 1906 and near Sabie in June.

18. SARCIDIORNIS MELANONOTA. (Knob-billed Duck.)

I shot one in August 1906 on the Manzi Mhlope; it was very good eating.

19. DENDROCYNNA VIDUATA. (White-faced Duck.)

I shot one of these on the Inkomati near Mangule on the 19th August, 1906.

20. ANAS UNDULATA. (Geelbee or Yellow-bill.)

I shot one of these on the Tswali Lake on the 15th August, 1906, and since that date I obtained several others; they are of very fine flavour.

21. VINAGO DELALANDII. (Delalande's Green Pigeon.)

I shot these birds between Kilometre 53 and Sabie, on the Inkomati River in July; they are delicious birds to eat.

22. TURTUR CAPICOLA. (Cape Turtle-Dove.)

I shot these birds all along the Inkomati River in 1906. They nested in the trees beside the river, and I took several clutches; some partly incubated in June.

23. PTERNISTES SWAINSONI. (Swainson's Francolin.)

I shot a hen at M'Karu on the 12th July, 1906; they are generally found in pairs in July.

24. BALEARICA REGULORUM. (Crowned Crane.)

I saw this bird in small parties of four to six at Manzi Mhlope in August 1906.

25. OTIS RUFICRISTA. (Red-crested Knorhaan.)

I obtained a specimen about three miles S.S.E. of Posto-

do-Sabie on the 20th June, 1906. I should not call the crown of the head and the patch from the base of the beak to below the eye exactly slaty blue; the central band of black on the throat was very indistinct, due to the base of the feathers being black, whilst the tuft of decomposed feathers on the nape was very pale.

26. OTIS AFROIDES. (White-quilled Knorhaan.)

Four were shot on August 10th, 1906, at Mangula, Gazaland. There were 12 together in a flock.

27. CEDICNEMUS VERMICULATUS. (Water Dikkop.)

I shot this bird on the Inkomati River near Mangula on August 19th, 1906.

28. GLAREOLA MELANOPTERA. (Nordmann's Pratincole.)

I saw and shot birds answering this description on an island on the Tswali Lake in August 1906.

Dr. Atherston, of Port Alfred, informs me that he has shot and eaten this bird, which caused him symptoms of ptomaine poisoning.

29. ACTOPHILUS AFRICANUS. (African Jacana.)

I first saw and shot this bird in a pan near the Inkomati on the border of the Sabie and Magar districts. When wounded, it hid in the reeds, keeping all but its bill under water. On the Kolivan River they were very numerous and very tame. They rose singly and in flocks up to two dozen in number and were quite a nuisance, because they flew before me a short distance at a time and put up the game—ducks &c.—which I was attempting to shoot.

30. LOBIVANELLUS LATERALIS. (Wattled Plover.)

I shot a specimen of this bird at the end of June on a vlei on the border of Sabie and Magada near the Inkomati, but the wattle was not red in colour—it was gamboge.

31. HOPLOTERUS ARMATUS. (Blacksmith Plover.)

Very common on the Tswali and Manzi Mhlope.

32. STRUTHIO AUSTRALIS. (Southern Ostrich.)

On the 11th August, 1906, I saw an Ostrich's nest at

Mangula, Gazaland. It was on a grassy plain which in summer would have been under water. The birds had carefully removed all the grass, and the eggs (21 in number) were on the bare sandy soil; hardly so much as a depression had been formed to receive them. The nest had been visited on several occasions, the 9th, 10th, and 11th August, between the hours of 8 A.M. and 4 P.M., and on each occasion the cock bird was on the nest. The nest was discovered by Mr. Brockhuizen very nearly riding over the male, which he thought had scattered the eggs on starting up, but on the following day the cock bird was again on the nest, and the eggs were not all in it. Mr. Brockhuizen put them all in. On the 11th I saw the nest. The cock allowed us to get within 30 or 40 yards. Nineteen eggs were in the nest and two just outside; the latter were quite cold, and I took them. They were addled. Most of the eggs were blood-stained.

[It is greatly to be regretted that Dr. Turner was unable to take with him a taxidermist, as he shot and observed many species which he was not able to determine or to preserve. His own time and that of his Dutch hunter was very fully occupied in shooting for his party and in looking after his boats, but it is hoped that now it has been shown that comparatively an easy river-trip can be taken through these interesting parts, others will follow Dr. Turner's example and make a survey on their route of the many rare species which are probably to be met with.—EDD.]

VII.—*Locust Birds in the Transvaal.* By F. THOMSEN,
Assistant Chief Locust Officer, Division of Entomology,
Transvaal Department of Agriculture.

My duties as Assistant Chief Locust Officer take me over most of the Transvaal. Everything in connection with locust-destruction is carefully noted, and birds especially are a subject of much study. All our District Locust Officers

are instructed to report on any birds they see destroying locusts.

In the following paper I have prepared some notes on the most useful birds, as nearly all birds eat locusts ; even grain-eaters often feed their young on insects, and should there be some young voetgangers at hand would naturally take them. I have, however, selected those which have been noticed by myself, or on which we have reports from the District Locust Officers, or private observers.

When the system of arsenic spray was introduced, the danger of poisoning useful birds presented itself. Experience has, however, taught us that the poisoned voetgangers have no ill effects on the birds in general, and even domestic fowls do not suffer harm. Still, orders are always issued to the District Locust Officers, and the farmers are warned not to spray with arsenic where locust-eating birds appear in any number, not because of the danger to these birds, but because they are quite able to destroy the voetgangers without any assistance. Should there be very large swarms of these insects, as was the case, for instance, last year in the Rustenburg District, the birds cannot eat them all. Small scattered swarms are an easy prey to birds.

It is a notable fact that birds only attack the flying locusts from behind, and I have never seen birds, with few exceptions, flying intentionally into a travelling swarm. They seem to fear the rushing noise, or know that a wind-driven locust travels with great force, and can hurt anything which it strikes. I am sure most people have experienced this, when they happened to drive or ride into a wind-driven locust-swarm.

I have often noticed that locust-eating birds lie quite flat on the ground when a swarm passes overhead.

I have observed tame pigeons becoming accidentally mixed up in a travelling locust-swarm ; they seemed to be quite helpless, fluttering about, darting here and there in trying to get out of the way, as the moving insects strike them, and when they had reached a place of safety were quite exhausted.

Both our migrating locusts, the Red Locust and the Brown Locust, do a great amount of damage, and the locust question is a most serious one for the South African farmer, as the growing crops, the ripening grain which meant days of toil and labour, even the grass on the veldt is often devoured and swept away by these greedy insects. In the early stages, as voetgangers, the farmer can work against them with considerable ease, but when the flying swarms appear he can only try to drive them away. There are, however, many little feathered friends which help, and which although they might not be able to avert this danger altogether will do a great deal in minimising it.

To show what part the birds take in locust-destruction, the following will be of interest. A friend of mine who used to trap birds, and also animals for collections, often told me that it was useless to put out snares or lay traps when a swarm of locusts, either mature insects or voetgangers, were in the neighbourhood. All birds follow these insects, feeding on them, and no bait was touched: he had to wait until the locusts were either eaten up or had passed.

To the west of the Transvaal is a vast waterless stretch of country, the Kalahari Desert. The swarms which are hatched in the Transvaal travel westwards as soon as they are strong enough to fly long distances. These swarms seem to stay in the west for some time and return during the winter months. Last year the first swarms came in May, and this season as early as March.

What is the attraction which causes the adult insect to go west, and come east in winter to lay eggs? There are different views which could be taken on this question. We find during the summer months many swarms of birds, such as the "Glareola," the "Abdimia Stork," the "European Stork," and the "Wattled Starling," hunting and eating the locusts; in fact most of these birds live on locusts alone. I have often noticed these insects chased by birds; they seem to be well aware of the danger, and either try to get away and out of reach by great speed of flight, or they drop to the ground and take cover. Many a time I have seen voet-

gangers in a patch of mealies : the stalks were covered with the little fellows, looking reddish brown from a distance. Just beyond the field a flock of White-bellied Storks were feeding. I took up a good position and watched. The nearest birds to the mealie-land saw the voetgangers and moved towards them, the others following. Soon the birds were amongst the mealies picking off the young locusts as they hopped about, but this did not last long : I saw the birds moving out of the fields, so I went nearer to ascertain whether all the voetgangers had been finished up, but found, however, most of them hidden under the leaves and clods, or in cracks of the ground, where they were out of sight of the birds. The Storks returned later, and it was only by catching the young voetgangers outside of cover that the birds managed to procure them. Something of the sort can also be seen in the case of the flying insects. As soon as they find themselves hunted by Pratincoles or Kestrels they fall to the ground, get out of sight as much as possible in the long grass, and are safe for some time, as the Pratincole is not fond of taking food off the ground. These two instances should suffice to show that the locusts have a knowledge of the danger, and try to escape. Let us take the case of the Brown Locust, "*Pachytylus sulcicollis*." In December or January when the young adults start flying slowly about they are a great attraction to all kinds of birds, which hunt them everywhere, and the locusts try hard to get away. Wherever they go they are attacked, and the birds often follow them for days ; the hunted insect moves on and on till it happens to come to a place where birds are rare and far between, such as some part of the Kalahari Desert.

Our principal locust-eaters, such as the *Glareola*, the *Dilophus*, or the Storks, are forced to a certain extent to keep near water. Others, like the Guinea-fowl, the *Francolina*, &c., are more stationary birds, and never leave their breeding-places for a long while ; they are also mostly to be found in the neighbourhood of water and rivers. There are districts in the Kalahari where rain is, virtually speaking, unknown, sometimes ten years go by without a drop of rain ; it stands

therefore to reason that birds such as the above named would not stay in a place of that nature. I should say that the Brown Locusts, by long experience, have found out that there is a place of safety, a place where they can rest and feed undisturbed by a host of feathered enemies during the remaining summer months. When winter approaches and the sweet herbs are eaten or dried out, the swarms look for new fields of pasture and start moving again ; perhaps the ruling winds of that period of the year have something to do with it, as it is at that time that the locust-swarms again appear in the Transvaal, coming from the West. They find a clear ground, as their feathered enemies have migrated back to the interior or to Europe. There is nothing to oppose them, no body of birds to hunt and chase them about, and the swarms move on and on, often covering many districts of the Transvaal.

THE SMALL LOCUST BIRD. (*Glareola melanoptera*.)

The "Glareola" (the Small Locust Bird, as it is called by the farmers) takes a most prominent part as a locust destroyer. We have first to consider "*Glareola melanoqaster*" (*G. melanoptera* : Andersson's 'Birds of Damaraland,' p. 264 ; Reichenow, p. 145 ; Dr. Saunder, 'Die Henschrecken und ihre Bekämpfung,' p. 294). *Glareola melanoqaster* is somewhat larger than a Starling, and the long wings reach over the tail when resting. There is a general greyish colour on the back, down to the belly, which is whitish. The throat is brownish mottled, and is parted by a dark grey, nearly black, band from the chest. The wings are dark grey, nearly black, with the underside whitish, which shows when the bird is flying. This bird appears in huge swarms in the South African Spring—that is, after the first rain-showers in September or October. All authorities are agreed that the digestion of the "Glareola" is very rapid. During the hotter part of the day, one can see them in great numbers, tripping through the young grass, or sitting quietly in low-lying places. In the afternoon or early morning their activity begins. They get on the wing as by word of command, and

fly and whirl round and round, rising higher and higher till the swarm looks like an immense dust-cloud drawn up skywards. During this exercise they always move forward till some swarm of locusts is sighted, and then the birds break away like a storm-swept cloud breaking into tatters. When they reach the swarm they attack from behind, flying and darting through the insects, a shower of wings and legs of the locusts and droppings of the birds falling to the ground like rain.

The beak of "*Glareola*" is constructed to fit the flying locust, the wings and hind legs are snapped off and fall down. Dr. Brehm ('*Vögel*,' p. 87) quotes some *Glareola melanoptera* which were kept in captivity, and which became very tame; they took locusts very greedily out of the hand, but killed them first with their beak and swallowed them in bits. This seems to prove the fact that it is easier for them to take this insect with the wings spread, which would be the natural position during flight. I could not find reports of *Glareola melanogaster* breeding in South Africa. Dr. Saunder mentions on p. 295 of the '*Agricultural Journal*,' Capetown, 1898, xii. p. 287, "The Small Locust Bird," that Barrow saw nests in trees resembling Vultures' nests. This is very likely a mistake, as the *Glareola* always breeds on the ground; what he means is evidently *Dilophus carunculatus*, Brehm; and Reichenow says that Greece, the marshes of the Danube, and Southern and Central Asia are their favourite breeding-grounds. A few months ago I read in a sporting paper that large quantities are shot every year in Hungary for food, and Brehm also relates that the eggs are considered a delicacy in Greece. This *Glareola* and *G. fusca* were known to the old Egyptians and considered sacred, because they supplied food. Ptah Hotep is reported to have slain 111,000. Their images appear often in hieroglyphics (Brehm, v. p. 87).

Glareola fusca (*G. pratincola*, Layard, Birds S. A.), which also visits South Africa in large flocks, differs from *G. melanogaster* by the more brownish rusty colour. Sharpe, in Layard's '*Birds of South Africa*,' says on p. 652, "The *G. pratincola* may be distinguished by the chestnut colouring of the under

wing-coverts, the same parts being black in Nordmann's Pratincole" (this is *G. melanoptera*; Sharpe also calls it *G. nordmanni*). I have a skin of a young female in my possession which was obtained at Mabalstadt in the Rustenburg District. Head and throat down to the breast is mottled brown on a lighter ground, here the colour goes off into a greyish brown to pure white, on the underparts down to the tail. The under tail-feathers are white with greyish-brown terminals, which take up about half the feather. The back is rusty brown with faint light bands on the outer end of each feather. The wings are dark brown, nearly black; the tip of the first primary is white. There is no band round the throat; beak and legs are black, eye dark brown.

Glareola fusca has been found breeding in South Africa (Andersson's 'Birds of Damaraland,' p. 264; Reichenow, p. 145). I saw a few specimens, in October 1905, close to Lichtenburg, on the moist turfy places to the south of the town. They evidently found enough food and wintered over. In their flight and the way of taking locusts on the wing they resemble *Glareola melanogaster*. At the lead-mine in the Marico District, I noticed a big swarm of these *G. fusca* flying low and settling in the road in front of me; when I approached them I found they had attacked a swarm of voetgangers, which soon disappeared into their stomachs. They flew up when I passed, circling round, but settled as soon as I had gone, to finish their meal.

The voetgangers, who were moving fast to the east, stopped when they were attacked, and tried to hide in the long grass which bordered the road on both sides. Both these small Locust Birds keep to the high-veld, and are seldom found in the bush-veld and low-veld of the Transvaal.

THE WATTLED STARLING. (*Creatophora carunculata*.)

The next bird which is often mistaken for the Small Locust Bird is *Dilophus carunculatus*, commonly called the Wattled Starling*. Andersson has reported it from Damaraland, but does not say anything in connection with locusts.

* This bird is also called the Small Locust Bird by the Afrianders.

Reichenow, pp. 670, 671, says that *Perissornis carunculatus* is absolutely dependent on locusts. They appear in large swarms and nest in colonies, in trees or in holes in the sides of dongas; the voetgangers are their guides; where they appear in large swarms, *Dilophus* will build their nests, and should they give out, or be eaten up before the young are reared, the little birds die in numbers. I can only verify this report in so far that anywhere where I saw the *Dilophus*, the voetgangers were in abundance. I have heard, however, from Irene, close to Pretoria, that every year some *Dilophus* breed there—in fact, are resident all the year round. I have seen them at Grootafdeeling, Marico District, where they slept in reeds; they were seen every afternoon in small flocks in company with the Red-wing Spreeuw (*Amydrus morio*). Along Oberholzer's Kloof, our locust officer caused many swarms of voetgangers to be burnt. This the *Dilophus* soon found out and fell to eating the half-burnt locusts. A fortnight later when I arrived there it was only necessary to make a little smoke to collect numbers of *Dilophus*. In this way I got the skins in my possession. At Koekemoer Station, between Potchefstroom and Klerksdorp, I also saw a flight of these birds feeding their young. They came in small flocks, as all the Starlings like to fly, hopped amongst the fast-moving voetgangers, filled their beaks with as much as they could hold, and flew off, a fresh lot taking their place. I watched for about fifteen minutes, and counted about as many different flights of birds, each flight consisting of some fifty in number. I tried to follow them to their nests, but this led me so far off the road into such rough country, that I had to return. *Dilophus carunculatus* is about the same size as the Starling, greyish brown all over the wings and tail, very dark with a greenish sheen on it. The under part of the abdomen and under tail-coverts is a very pale greyish brown; around the eyes there is a bare bright yellow patch, on the throat of the males are two black wattles, from which the bird takes its name. These wattles are larger on some specimens, and sometimes there is also another wattle on the top of the head and one on the forehead close to the upper mandible.

The stuffed specimen in the Pretoria Museum, the live one in the Zoological Gardens, and the skins in my possession, only have the two small wattles under the throat.

Most of our South African Starlings, or Spreeuws, live on insects, and naturally are often found following the voetgangers, helping to diminish the numbers of these pests. Some, like the Red-wing Spreeuw (*Amydrus morio*), which is so fond of figs and grapes, leave the fruit alone, for the time being, and gorge themselves with voetgangers.

The Wit-gat (*Spreo bicolor*) can also be seen on the highveldt, feeding on young locusts.

This latter Starling does not live on the low-lying regions of the Northern Bushveldt.

THE WHITE-BELLIED STORK. (*Abdimia abdimii*.)

Abdimia abdimii (*Ciconia abdimii*, Andersson's 'Birds of Damaraland,' p. 280; Reichenow, p. 343; Brehm, v. p. 517) has been noticed in large swarms during the last few locust seasons in the Northern parts of the Transvaal. This Stork appears after the first rain in large numbers, destroying the voetgangers. I have seen these birds in the Waterburg District in thousands. Wherever young locusts were to be found this Stork put in an appearance. They covered the flats like a large flock of sheep, stalking or running with outspread wings after the locusts. The voetgangers soon vanished. It was a fine sight when these birds flew home in the evening to their roosting-place—first circling round till they were mere specks in the sky, then resting on their wings, all floating in one direction towards the sleeping-place. I did not allow any spraying with arsenic where these Storks appeared, not alone for fear of killing any of these valuable birds, for they ate poisoned locusts in many places without any harm being done to them, but because the Storks were quite capable of finishing the swarms of voetgangers. We have also communications on record saying that the White-bellied Stork arrived at places where voetgangers had been poisoned by arsenic spray. The birds were watched at their roosting-place, which was some big thorn trees; they returned

every day for at least a week and looked quite healthy, no dead ones being found anywhere. Some reports were circulated to the effect that thousands of these Locust Birds had died on the Springbok Flats, so I caused our Locust Officer for that District to make enquiries at once. He could not find dead birds, neither did he hear of any dead ones. One bird was, however, found eaten by Jackals, far away from where any spraying had been done. *Abdimia abdimii* is black with a greenish gloss on the upper parts, and, as the name implies, has a white belly. There is a circle, bare of feathers, round the root of the beak.

THE WHITE, OR EUROPEAN STORK. (*Ciconia alba*.)

Ciconia alba (Andersson's, p. 280; or *Ciconia ciconia*, Reichenow, p. 345; Brehm, vi. p. 508) visits the Transvaal every year. This is the Large Locust Bird of the South African farmer. I have seen this bird often in the company of the Abdimia Stork in the Northern Transvaal as well as on the flats of the high veldt of the Northern districts. They do a lot of good by eating great quantities of locusts both in the adult as well as the nymphal stages. A grass-fire will always bring a number of them together if they are in the neighbourhood. One can see them darting through the smoke, even running through the fire where it is not too strong, catching all insects which are disturbed by the heat. At Kosterfontein, and at Twee River in the Rustenburg district, I saw a very large flock of these birds last November demolishing the swarms of voetgangers. This Stork does not breed in South Africa. The white plumage with the black wings, red beak, and legs of the Large Locust Birds is well known to all travellers.

THE KESTRELS. (*Tinnunculus*.)

When the locust-destruction work in Rustenburg and Marico districts was finished in January this year, a few swarms of locusts remained over. Some few voetgangers in out-of-the-way places, between the mountains or bushes, shed their last skin and became adults, then collected together and began to move in a south-westerly direction; but their flight

was short—some did not even reach Lichtenburg; hundreds, in fact thousands, of the South African Kestrel (*Tinnunculus rupicola*), accompanied by some Large African Kestrels (*T. rupicoloides*) and Lesser Kestrels (*T. naumanni*), followed the slow-moving young adult locusts, eating them in vast numbers. Some eye-witnesses say that they had never seen so many Kestrels together. *Tinnunculus rupicola*, like all birds-of-prey, catch the flying locusts with their claws, eating the insect piecemeal on the wing, very seldom settling down on an ant-heap to finish the meal. The wings and hind legs of the locust are dropped. Reichenow (pp. 1, 640, & 645) as well as Andersson and Brehm (vi. p. 256) report on the utility of these birds. These Kestrels are everywhere recognized as locust-destroyers and in some countries even considered as sacred. Brehm (vi. p. 257) believes that the *Tinnunculus* came to South Africa from the North by following the locust-swarms, and finding the country to its liking, and food plentiful, remained. The fact is that two of the three species of *Tinnunculus* now breed in South Africa, although only in small numbers. In summer they appear in swarms, whether migrated from the North or collected together locally is difficult to ascertain.

I noticed a few days ago several pairs of *T. rupicoloides* to the west of Pretoria, catching flying locusts. They do not seem to like the rushing noise of the flying swarm, and get out of the way, only commencing the chase when the main body has passed, catching the stragglers and weaklings.

THE GUINEA FOWL. (*Numida coronata*.)

Both Andersson and Reichenow mention this bird as a locust-destroyer. There are also several reports on this bird in the 'Cape Agricultural Journal' (1896, p. 332). I have known the Guinea Fowl for a long time as a great feeder on both flying locusts and voetgangers, as well as the locusts' eggs. I have seen flocks of a hundred and more of these birds getting round a voetganger swarm, doing away with it in a short time. In some years, very likely on account of the great number of locusts, the Guinea Fowl rears

two broods of chickens. I have a report of Guinea Fowls eating poisoned voetgangers without any ill effect on the birds.

In connexion with *Numida coronata*, I have to mention the Pheasants and Partridges (*Francolinus*), as they also do a lot of good in destroying locusts and their eggs. Most of our South African Partridges and Pheasants of the genera *Francolinus* and *Pternistes*, of which we have close on eighteen different species, are great locust-destroyers, although they do not rank alike with the Guinea Fowl, as their numbers are small and they are shot and trapped everywhere in spring on account of their habit of digging for the growing mealie-kernel. I have shot Pheasants with the crop full of voetgangers,—at other times, however, I have found it filled with a large termite. If it happens that locusts have laid eggs in the neighbourhood of rivers or any standing water where the Francolinidæ are fond of living, a great many of the eggs are sure to be dug up by these birds, as all Pheasants and Partridges are fond of scratching.

THE WHITE EGRET or TICK BIRD. (*Bubulcus lucidus*.)

(Brehm (vi. p. 491) calls it *Ardea flavirostris* (Rafui).)

This well-known bird is also a great locust-destroyer. I have seen flocks of these beautiful Egrets in the Nylstroom Valley looking like long white clouds as they floated past in the early mornings. They were going to feed on the red-locust voetgangers, which were very plentiful about there in January 1905. The White Tiek Bird is fond of water or moist marshy places, although one may often find it in spots miles away from any river or dam. They accounted for many swarms of voetgangers in November and December last, in the country along Mooi River and Schoen Spruit. I have had a report recently of a flock of several hundreds of these birds from the Springbok Flats eating the flying brown locusts which infest that part of the Transvaal at the present time. It seems, however, that they can only finish off a very small number of the locusts, as they have to catch each insect by running after it and cutting it up with their beaks before

swallowing. The voetgangers are taken up whole and in larger quantities, evidently because they are softer and without wings and stout hind legs.

THE HADADAH IBIS. (*Hagedashia hagedash*.)

Not very long ago I was walking down one of the long bushy creeks leading to the Barberton Railway. I was in a hurry and had to catch the train, and did not look about much. All at once I was startled by a peculiar cry: "Hah, Hah!" a flutter of wings followed, and close in front of me rose two dark birds from the river-bank. They settled in a big tree and gave me time to have a good look at them, repeating the weird call several times; when I came nearer they flew up and alighted on some rocks close at hand. I could see some twigs and grass sticking out over the ledge—they were busy building their nest and I had disturbed them. I recognized the birds as the Hadadah Ibis (*Hagedashia hagedash*).

This incident brought back to my mind some pleasant days I had spent in company with a friend several years ago on the Eastern Springbok Flats after springbok. It was in March (the shooting-season opened earlier then); there were large swarms of red voetgangers about, and the "White" and "White-bellied Storks" were busy. Late in the afternoon, when we returned, I heard the same weird cry. A large flock of Hadadah arose on the wing right in front of us and dropped on some thorn-trees. They were feeding on little voetgangers when we disturbed them. On that occasion, in the dim evening light with the red glow of the setting sun on their bodies, the birds looked much browner than they really were. I have seen these birds—there must have been several hundreds of them—and also other flocks several years later, stalking about in their peculiar fashion, moving the body right and left and bringing the head down every time, devouring voetgangers.

The Hadadah is dark greenish on the back and wings, the underparts are grey, the beak is long and bent downwards. The legs are short, and the beak and feet are greenish grey;

eyes nearly black. It often breeds in colonies, gathering together as long as the young birds have still the juvenile plumage—which is of a more mottled grey all over—and pairing off in Spring. In warmer parts, such as the case afore-mentioned, it seems that they start building their nests in June. There is no doubt that this bird is of great utility in locust-destruction and should not be shot, although many people consider the Hadadah a delicacy.

THE CRESTED BUSTARD. (*Otis kori.*)

Although this bird is only found sparsely here and there in the bush-veldt, it does away with a great many locusts, both in the “flying” and earlier stages. This “Paauw,” as it is called by the farmers, is of great size, sometimes weighing as much as 30 to 40 lbs., and naturally will have to eat a lot of food. When locusts were plentiful I have seen them so fat that they could only rise with difficulty, and I have heard from hunters and natives that when in this condition they could easily be ridden down and killed with a stick.

The Crested Bustard is now protected by law, and rightly too—not alone because it is scarce and breeds very slowly, laying as a rule one or two eggs, but also because it does a lot of good to the farmer in killing and eating locusts as well as mice and snakes. Besides this large Bustard the other Bustards and Korhaans eat many locusts; their number is, however, too small to be of any great account, yet it is in the farmer's own interest to extend to these last-mentioned birds more protection.

THE CAPE TURTLE-DOVE. (*Turtur capicola.*)

I am sure many people will be astonished to hear that a bird which is known as almost an exclusive grain-feeder will eat voetgangers also. The Ring-Dove has been seen by one of our “locust” officers going in small flights during the afternoon where voetgangers were hopping about and feeding on them. This observation was made in February 1905 along the Pienaars River; it is not alone interesting on this account, but also for the reason that voetgangers (red locusts) were dying of arsenic spray. The Doves were carefully

watched, where they went to roost ; next morning all returned to their voetganger feed and none seemed to be the worse for it ; nor could any dead ones be found. The larger European Turtle-Dove has been reported as eating small snails in Europe. I have seen some of the Ring-Doves in Oberholzer's kloof eating voetgangers in November last.

THE BLUE CRANE. (*Tetraptyx paradisea*.)

All over South Africa the Blue Crane, or Stanley Crane (*T. paradisea*), is found in pairs or small flocks. Most travellers know this stately bird with its pearl-grey plumage and long feathers. How often one hears, on a warm Spring day, the plaintive cry of this Crane flying high overhead, a mere speck to the eye, or more often nothing but the flash of the underside of the wings in the morning sun can be noticed as the eye looks where the strange call came from. This Crane is a great locust-eater, but, as far as the Transvaal is concerned, it does not account for much ; its numbers are too small.

Reichenow calls this bird *Anthropoides paradisea*, the Large Locust Bird of the Dutch inhabitants ("De groote Springhaan-vogel"). I have never heard, in all my travelings, any Dutch farmer call the Blue Crane "de groote Springhaan-vogel ;" if he speaks about a Large Locust Bird he invariably means the European Stork (*Ciconia alba*). I have been informed by many people that this Crane does a lot of good in digging up locust-eggs.

THE SWALLOW.

One afternoon late in November, while I was travelling on the road from the Lead-mine to Mabalstadt, my attention was drawn to perhaps a hundred small birds flying round one spot on the veldt. Coming near I recognized these birds to be the White-throated Swallow (*Hirundo albigularis*) ; they had collected a little swarm of small voetgangers in some long grass and were circling round these, picking the insects off the grass as they darted past. The only other instance I can record was at Nylstroom. In January 1905 the voetgangers were moving over the waggon-road, hopping in their

peculiar fashion. Some Swallows flying forwards and backwards over them were taking the young locusts when they were in mid-air. It was there also, a few days later, that I saw about half a dozen Swifts swooping close over a swarm of very young voetgangers and catching them as they hopped up.

THE QUAIL. (*Coturnix capensis.*)

A small bird, but a great locust-eater, is the South African Quail. It appears, like most migrating birds, after the first rains have fallen, although I have often noticed a brace or so in the winter months where lots of food were to be found, such as old cattle-kraals or Kaffir corn- and mealie-fields, feeding on the little black seeds of weeds growing in such places.

The Quail breeds in South Africa in wheat- and oat-fields. Numbers of eggs and young are destroyed by the reapers. In nearly every Dutch farmhouse strings of eggs can be seen hanging on the walls; most of these are Quail-eggs—in the Orange River Colony more so than in the Transvaal; in the latter Colony more eggs of the smaller Finches will be found. I have seen bags of fifty or more brace of Quail by one sportsman in a day.

Considering the great help this small bird gives to the farmer in devouring all kinds of insects, and especially locust-voetgangers*, I quote an article which appeared in the 'Cape Agricultural Journal' of 1893 (p. 227), under the heading of "Quails and Locusts." The French journal called the 'Elevéur' (that is, "Breeder") publishes an article on the traffic in Quails, which the writer criticises from an entirely new point of view. The correspondent attributes the enormous increase of locusts, from which the Algerian Colonists have so fearfully suffered last year, to the cupidity and greed of gain of a few dealers in poultry. The writer goes on to say how most game-birds are shot at recklessly, and concludes with the following statistical remarks:—"A

* [See the review of the U.S. Department of Agriculture Pamphlet on the Quails, vol. ii. p. 138.—EDD.]

Quail consumes daily 50 to 60 grammes of food, and twenty tiny locusts of the size of a hemp-seed go to a gramme." Hence it follows that, according to his calculations, one Quail alone devours daily one thousand locusts and from twenty to twenty-five thousand during the period in which these insects are small enough to be swallowed by a Quail. The Parisian sportsmen who on the 8th May last year shipped off 50,000 Quails to France are, then, in a great measure to blame for the fact that one hundred and fifty millions of locusts less than usual were destroyed by these birds during the year.

THE HORNBILL.

All the South African Hornbills (*Lophoceros leucomelas*, *L. erythrorhynchus*, &c.) are locust-eaters. During the years when voetgangers are plentiful, the females and young are exclusively fed on these insects. Their breeding-season falls in November and December, just about the time when the brown locust is in its nymphal stage. The hen bird, when all the eggs have been laid in a hole in a tree, is plastered in with clay by the male; only a small slit is left, through which the food is passed. Most authorities agree that the male bird is so hard worked in supplying his family with food that he gets very weak and falls off in condition, barely taking the necessary time to swallow some food. Now, if a swarm of voetgangers is near at hand, the feeding of the female and young is easy work, the male obtaining leisure to rest and to feed himself. I have noticed these birds for hours flying continuously between the voetgangers and clay-hidden nest, they must have therefore done away with a great many young locusts. But, although doing a lot of good, these are not plentiful enough to annihilate large swarms of voetgangers.

THE DOMESTIC FOWL.

To see what effect the poisoned locusts would have on Common Fowls, some experiments were made at the Entomological Laboratory at Daspoort, Pretoria.

We obtained a lot of red-locust voetgangers from the District Locust Officer at Piet Retief, which had died of arsenic spray. These were analysed by the Government Chemist and found to contain as much as 0·291 per cent. arsenious oxide as compared to their weight. The average weight of each insect was 0·2 gramme, so that each would contain 0·000086 gramme (or ·000134 grain) of arsenious oxide.

Of six fowls (three cocks and three hens) two were selected and fed on 15 grains of arsenite of soda each, in porridge. Both died—one within an hour, the second one next morning.

Post-mortem examination showed effects of arsenical poisoning.

The other four fowls, two in one cage, were fed on the above-mentioned poisoned voetgangers, which had been dried first—25 grammes pounded up and mixed with about 50 grammes porridge. This was given once a day for twenty days—that is, from the 6th to the 26th April, 1906.

All these four fowls were doing well—no sign of poisoning could be noticed; in fact the fowls are still living, that is, June 1906.

We have also several reports of Locust Officers as well as private people on record, mentioning the fact that in no case have fowls died which fed on locust voetgangers killed by arsenic spray.

A report from Rustenburg District says that farmers' wives asked the Locust Officer to bring some dead voetgangers (killed by arsenic spraying) for poultry-food.

From Waterberg District came a report that some arsenic spraying was done close to the Homestead, and the dead and dying voetgangers were greedily eaten by the fowls. It was expected that they would die, but quite the contrary happened; the fowls did not die, in fact never seemed better, some infectious disease being stopped at the same time.

The mature insect, however, might do some harm, even though not poisoned, as fowls, and especially Turkeys, get

hurt internally by the spikes on the stout hind legs of the adult locust. I have seen reports of Turkeys dying after gorging themselves with locusts. In a dry state and pounded up I do not think they would do any harm.

The idea of breeding locust-eating birds and using them in the locust-destruction campaign has often been brought forward. I think this would be quite impracticable: the food question, and in consequence the expense, would be enormous. Every enterprising farmer could do something of this kind on a small scale himself. When it is known that locusts have deposited their eggs on the farm, the farmer could collect fowls, ducks, geese, or tame Guinea Fowls and have them in readiness for the first rains. When the voet-gangers appear above ground, he could move his poultry in portable houses to the spot on the farm where they are hatching, open the doors and let the birds roam about. A few pigs would help, in so far as they turn up the soil where the eggs are laid and so facilitate scratching and foraging for the birds. Water must be supplied, and very little grain-food, close to the roosting-houses; it would also be advisable to keep a guard near by to drive off birds-of-prey or other vermin.

Before closing this paper I would like to say a few words on the protection of birds. Game-birds have a certain time during which they are protected by law, but the other birds are free to be shot. How often wanton destruction takes place in towns and on farms: small boys with catapults and grown-up people with guns are seen killing birds for pastime!

I would not advocate having laws passed prohibiting the wanton killing of birds. No! what is wanted is a more general, a more thorough education, on the utility of these feathered friends, not alone in all schools but also at home and in newspapers. A law without education does not help: the public must first know and feel that our winged allies are deserving of some recognition.

Pretoria,
20th January, 1907.

Another locust campaign has been finished since the foregoing article was written—a campaign on a very much larger scale than the others. Nearly two-thirds of the Transvaal was covered with voetgangers of the brown locust, and about one-third of the Transvaal is still covered with the voetgangers of the red locust.

Large swarms of *Glareola* appeared in November in the south and south-west. The White-bellied Stork and the European Stork were not noticed before the beginning of December, and then only in small numbers.

In Waterberg, Rustenburg, Marico, Wolmaranstad, and in the Potchefstroom Districts, *Creotophora carunculata* (Wattled Starlings) were found nesting.

In the neighbourhood of Bloemhof large flocks of the Spur-wing Geese (*Plectropterus gambensis*) helped to finish off swarms of voetgangers. In January I noticed that the Quails were very plentiful, both in the Waterberg and the Zoutpansberg Districts.

When the brown locusts got their wings they moved, as in previous years, in a south-westerly direction, followed by both Kestrels and *Glareola*, which I am sure finished off a large number of these insects.

It was observed during this campaign that at the time the Brown Locust voetgangers hatch—that is, in October—very few birds had arrived; in fact it is only now, in January, when the voetgangers of the red locusts are hatching, that the migratory birds are all here.

In the Northern Transvaal where the *Glareola* is not a resident, and is only seen passing through, it is one of the first to arrive. This scarcity of Locust Birds, or their late arrival, is rather serious when considered in connection with the brown locust campaign. On the other hand, I find that the red locust voetgangers, now hatching, are sought after by most of the above-mentioned birds. I would also like to mention that in the Piet Retief and Wakkerstroom Districts exceedingly few birds were noticed.

VIII.—*The Birds of Albany Division, Cape Colony.*

By ALWIN HAAGNER, F.Z.S., M.B.O.U., and ROBERT H. IVY.

(Plates III.–VI.)

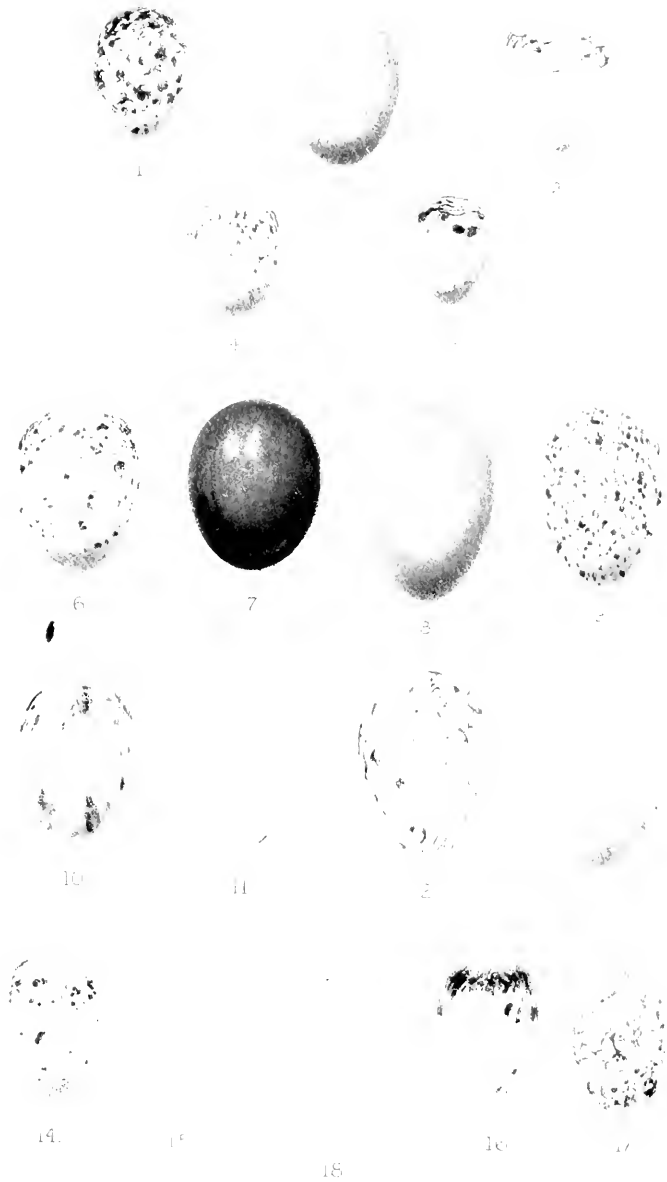
[THE foundation for this paper was a collection—or, more strictly speaking, the remains of a collection—of birds made by my old friend Robert Ivy, of Grahamstown. Through an unfortunate accident a large number of the skins were destroyed by fire. The remainder have been acquired by the Transvaal Museum, and my thanks are due to Dr. J. W. B. Gunning, F.Z.S., the Director, for allowing me access to the same after they had left my hands. Mr. Ivy is mainly responsible for most of the actual field-notes, and my hearty thanks are due to him and his sons, without whose able guidance my sojourn amongst the Albany Kloofs in January 1907 would not have been nearly so successful.—A. H.]

THE Division of Albany is in the South-eastern Province of Cape Colony, and has the small Districts of Bathurst and Alexandria between it and the seaboard. We have confined the list strictly to birds obtained within the borders of Albany. Species not represented in the Tvl. Museum are prefixed with an asterisk; where species occur not so represented but have since been obtained, and are in our private collections, a reference will be made.

Our thanks are due to Capt. Shelley for identifying several dubious species; and last, but by no means least, we must express our indebtedness to Mr. Henrik Grönvold, the celebrated artist of the British Museum, for his ever ready help and sympathetic interest.

1. CORVULTUR ALBICOLLIS (Lath.). White-necked Raven.

Very common at times. Nests taken near Grahamstown in December 1892, January 1896, December 1896, and November 1898. During the year 1890 they were very plentiful, but of late years they have become much scarcer, probably owing to the work of the poisoning clubs. Judging by the way they follow one another, we should say they



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FIG. 17. —
SOUTH AFRICAN MALARIAL PARASITES

discover their food more by sight than from any sense of smell.

2. *CORVUS CAPENSIS*, Licht. Black Crow.

Fairly plentiful, flying in family parties of six to a dozen individuals during the winter months, and feeding on both grain and animal food. In October they pair off and begin to build—sometimes in a high tree in a solitary situation, but oftener among the trees in a wooded kloof. The nests—deeply cupped—are well made for such large structures and are composed externally of small branches, and lined with fine roots and fibres. A tame specimen learnt to imitate human voices, but could not articulate words. It mimicked the fowls and a terrier-dog to perfection, so much so that visitors were repeatedly taken in by the bird.

3. **BUPHAGA AFRICANA*, Linn. Yellow-billed Oxpecker.

One specimen, now in the Albany Museum, Grahamstown, rode four miles into town on the horse of a local resident, and was eventually knocked over with a riding-whip. This is, so far as we are aware, the only record of its occurrence in Albany.

4. *CREATPHORA CARUNCULATA* (Gmel.). Wattled Starling.
[*Dilophus carunculatus*, Stark, Birds S. A. vol. i.]

A flock nested close to the Chumie River near Koonap in December 1905. The nests—about 50 in all—were packed into a space of almost as many square yards. Small trees were literally enveloped in three or four nests. Other trees contained but a single nest. These latter measured about two feet by one foot, and every one examined contained two apertures on the same side. On January 20th the birds deserted the nests, leaving a few young ones and a number of eggs to perish and decay. During the winter months they are found in smaller numbers consorting with the common *Spreo bicolor* near Grahamstown.

5. *AMYDRUS MORIO* (Linn.). Red-winged Starling.
Common everywhere, and a great fruit thief.

6. *SPREO BICOLOR (Gmel.). Pied Starling.

Common: nesting in holes in cuttings, and in the sides of river-banks and dongas. It is quite possible that several females occasionally lay in one nest, as clutches of eight to ten eggs are not uncommon.

7. LAMPROCOLIUS PHENICOPTERUS (Swains.). Red-shouldered Glossy Starling.

Common. Frequently five or six pairs will build in the hollow branches of a single decaying tree.

8. *LAMPROCOLIUS MELANOGASTER (Swains.). Black-bellied Glossy Starling.

Scarce. Seen in pairs in well-wooded neighbourhoods. The nest is similar to that of the preceding species, but the eggs are smaller, and those found by us were of a "somewhat pointed 'ovate' shape, of a uniform whitish ærulean-blue colour, the shell being grained and somewhat glossy, and measure 27×19.5 mm. Fig. 13, Plate III." (H. G.)

9. ORIOLUS LARVATUS, Licht. Black-headed Oriole.

Very common in the neighbourhood of gardens and lawns during the winter months. About September they become scarcer and in October commence to build. The nest is composed wholly of *Ptylandsia* (old-man's-beard moss), and the full clutch numbers three. Although these birds are usually very wild, one individual once allowed a camera to be placed within a few feet of the nest on which it sat.

The collection contained several specimens in juvenile plumage.

a. ♂, February 1906. Wing-quills dull black with dirty white margins. Crown of a rusty-black appearance, owing to the edges of the feathers being of a rusty colour. Cheeks black. Chin and throat hoary, broadly streaked with black. Remainder of plumage agreeing with Stark's description.

Length $9\frac{5}{16}$ inches, wing $5\frac{3}{8}$, tail $3\frac{1}{16}$.

b. Resembles above, but is slightly larger.

c. Resembles Dr. Stark's description to a greater degree than either *a* or *b* and is larger, so we conclude Stark

described his birds from individuals in almost mature plumage.

10. *HYPHANTORNIS VELATUS* (Vieill.). Masked Weaver Bird.

[*H. mariquensis*, Shelley, 'Birds of Africa.']

Capt. Shelley has given a key whereby he hopes it will be fairly easy to recognise the geographical races, but the single specimen in the collection is decidedly larger than the bird found on Modderfontein, Transvaal, and has, in addition, not nearly such a distinct chestnut shading on the forehead which is so typical of the Transvaal specimens. We have consequently no choice but to ascribe the specimen to the typical "*velatus*," although this name is only applied by Shelley to those birds inhabiting West Africa from Cape Town to Benguela. This question is a vexed one and much yet remains to be done before we can be perfectly clear in the division of this difficult genus. Mr. W. L. Selater thinks there are too many species of *Hyphantornis* and says there is a regular gradation in size and plumage between the Cape and Transvaal specimens of *velatus*. This species does not occur in the immediate vicinity of Grahamstown, but is found near Hylands. At the Kowie they are fairly plentiful, and build early.

11. *HYPHANTORNIS SPILONOTUS* (Vig.). Spotted-backed Weaver Bird.

Very common. This species prefers to build on the overhanging branches of trees near watercourses. We found them breeding heavily in Featherstone Valley near Grahamstown during the first week in January 1907. They are much execrated by the local farmers on account of their grain-eating propensities.

12. **HYPHANTORNIS SUBAUREUS* (Smith). Yellow Weaver Bird.

Not common. Nests occasionally in the reeds at Blue Krantz.

13. *SITAGRA OCULARIA* (Smith). Bottle Weaver.

Fairly common, and living in pairs, thus not gregarious in

habits like most of the Weavers. It often affects the open bush-veldt, sometimes nesting a considerable distance from water, although more frequently choosing a tree in the vicinity of water for a nesting-site. The nest is often of a tough red fibre. The eggs—three in number—are white, sometimes blotched with brownish pink and sometimes with purplish grey. We took a nest containing three fresh eggs, which was suspended from a branch of an old oak tree, on 5.1.07. The eggs were blotched and spotted, chiefly on the obtuse end, with pale purplish brown and dark brownish pink.

14. *SITAGRA CAPENSIS* (Linn.). Cape Weaver Bird.

The range of this bird is given as Western Cape Colony in the check-list, but a specimen from Albany was forwarded to Capt. Shelley, who named it "*Xanthophilus capensis*," whereas according to the geographical-race theory it should be *S. c. olivacea*, the outside western range of the typical species being given as "Algoa Bay." It is highly probable that both species inhabit Albany and that here they "come together"—or separate, whichever is the more correct way of expressing it.

Common. Fond of suspending their nests over water, hanging them to reeds or the pendent branches of the Cape willow. This bird is especially fond of feeding on the pollen of various flowers.

15. *SYCOBROTUS GREGALIS* (Licht.). Black-backed Weaver.

[*S. bicolor*, Stark, Birds S. A. vol. i. p. 72.]

Fairly common in wooded localities. We think the old name of "*bicolor*" by which it was known far more appropriate than the present title. It is not at all gregarious in habits, living in pairs, and suspending its compact retort-shaped nests, built of coarse materials—chiefly tendrils of various creepers,—from a high branch overhanging a stream in a wooded kloof. On 6th January, 1907, we, however, found one situated only about four feet from the ground, which is certainly an exception, as only two days previously

we discovered six or seven nests at altitudes varying from twenty to forty feet. Their song is a sweet weird one, and not at all harsh or creaking as it has been described. The bird is locally known as the "Bosmusikant" or "Bush-musician."

16. **AMBLYOSPIZA ALBIFRONS* (Vig.). Thick-billed Weaver.

Several clutches of eggs were taken at Blue Krantz. The nests are woven very close and constructed of very fine materials.

17. *SPOROPIPES SQUAMIFRONS* (Smith). Scaly-feathered Weaver.

Not uncommon at irregular intervals.

18. *LAGONOSTICTA RUBRICATA* (Licht.). Ruddy Waxbill.

Fairly common throughout the district; was particularly so at Alicedale Poort on the 12th January, 1907, where several flocks of from four to ten individuals feeding on the ground were observed.

Eight eggs have been taken from a single nest; hence it is probable that several females lay in one nest—or harbour some parasitical species not yet discovered †.

19. **ESTRILDA ASTRILDA* (Linn.). Common Waxbill.
Common throughout.

20. *ESTRILDA GRANATINA* (Linn.). Violet-eared Waxbill.
Very rare in Albany. ♂, August 1903. Cere red.
Not previously recorded from Southern Districts.

21. **ESTRILDA DUFRESNII* (Vieill.). Sweet Waxbill.
Common. The nest is generally situated in an aloe, thorn, or other bush, about three to six feet from the ground. Locally known as the "Sweet" throughout the South-eastern Province.

22. *ORTYGOSPIZA POLYZONA* (Temm.). Bar-breasted Finch.
At times fairly plentiful, but rarely nests in the District.

† [See Mr. A. Roberts's paper on *Vidua principalis* in this No.—EDD.]
SER. II.—VOL. I.

23. SPERMESTES FRINGILLOIDES (Laf.). Pied Finch.

An occasional visitor. The specimen in the collection was captured in Belmont Valley in January 1891, and was kept in captivity till August 1893, when it died. This species is new to Cape Colony.

24. *SPERMESTES SCUTATUS (Heuglin). Hooded Finch.

Sparingly met with. It makes a good cage-bird, living for years in an aviary.

25. AMADINA ERYTHROCEPHALA (Linn.). Red-headed Finch.

Formerly very rare in Albany, but of late years it has become fairly common, and nests in low thorn-bushes on the flats near Grahamstown. The locality in Selater's Check-list is only given as Northern Cape Colony, so it must be considered another addition to the Southern Avifauna.

26. PYROMELANA CAPENSIS APPROXIMANS (Cab.). Lesser Yellow Bishop.

Fairly common; nests in the long grass in the vicinity of small mountain-streams.

27. *COLIOPASSER PROCNE (Bodd.). Great-tailed Widow Bird.

Fairly common between Grahamstown and Port Alfred; and also on the marshy ground near the Chief Reservoir at Sly Kraal. We have collected specimens.

28. *COLIOPASSER ARDENS (Bodd.). Red-collared Widow Bird.

Fairly common, but not nearly so plentiful as in years gone by, before so much swampy land had been drained. Their nests are now very scarce, but were formerly very plentiful amongst the rank grass of the swamps in the vicinity of the town. The eggs number three or four, and the nest is as described by Ellemor in this Journal.

29. VIDUA PRINCIPALIS (Linn.). Pin-tailed Widow Bird.
Fairly common.

30. *PETRONIA PETRONELLA* (Gray). Diamond Sparrow.

In Winter they assemble in flocks amongst the high trees around town, but in Summer they resort to the high bushveld, where they almost constantly affect the decaying branches of dead trees. The vernacular name of "Rock Sparrow" by which this bird is commonly known in the text-books is a complete misnomer, as the bird is a true arboreal species, seldom alighting on the ground except when attracted by grain, which they readily eat, although they are principally animal feeders. So far we have only found them breeding in the hollows of trees and posts, and do not know of a single authentic case of a nest being found in a hole in a krantz or wall.

31. *PASSER MELANURUS* (P. L. S. Müll.). Cape Sparrow.
(*P. arcuatus*, Stark, vol. i. p. 160.)

The Mossie only occurs near Grahamstown as an occasional winter visitor. It begins to occur more frequently as the higher veld near the Fish River is reached, where little colonies of these birds are met with nesting in thorn-trees close to the roadside, or in holes in the walls of outhouses, and even in the water-spouts and under the eaves. They feed equally on grain and insect life and are not impartial to the young buds of trees.

32. *POLIOSPIZA GULARIS* (Smith). Streaky-headed Seed-eater.

Very common. Eggs usually number four or five.

33. *SERINUS CANICOLLIS* (Swains.). Cape Canary.

Very common. The nest, so far as our experience goes, is always lined with the downy seed-tops of various plants.

34. *SERINUS SULPHURATUS* (Linn.). Large Yellow Seed-eater.

Common. Nest and eggs similar to those of *P. gularis*. During the Winter months these birds and *P. gularis* congregate together in flocks, and feed largely on the dry sunflower heads.

35. **SERINUS FLAVIVENTRIS* (Swains.). Yellow-bellied Seed-eater.

Very seldom met with until the Lower Karoo begins. We have taken a few specimens in Albany.

36. *SERINUS ICTERUS* (Bonn. & Vieill.). Eastern Yellow Seed-eater.

Fairly plentiful, frequenting the wooded hill-sides and kloofs. The nest is similar to that of *S. canicollis*, but is lined with fibre, and is generally adorned on the outside with some green moss, a fact which we have never noticed to be the case with nests of *S. canicollis*. The eggs have a few inky streaks on the obtuse ends.

37. *SERINUS SCOTOPS* (Sundev.). Stripe-bellied Seed-eater. Occasionally met with. The collection contains two females.

38. *ALARIO ALARIO* (Linn.). Mountain Canary.

Only an occasional winter visitor to Albany, where they were trapped in cages prior to the Wild-Birds Protection Act.

39. **CHRYSOMITRIS TOTTA* (Sparrm.). South African Siskin.

Rare in Albany. Only a single specimen was taken.

40. *EMBERIZA FLAVIVENTRIS* (Vieill.). Golden-breasted Bunting.

Fairly plentiful. The nest is generally placed in the fork of a small tree six to ten feet from the ground, but is *never*, according to our experience, placed *on* the ground or in thick bush, neither do they build in the kloofs. The nest is cup-shaped, and is constructed of grass beautifully lined with long stiff hairs, such as horse-tail hair. The eggs, with their exquisite scroll-like markings forming a wreath round the obtuse ends, are well-known.

[Two eggs from Grahamstown are of a "short ovate" shape, of a pure whitish blue-grey colour with a very faint tinge of lavender, and with lavender spots and dark purple-brown streaks and scrawls, forming a zone about one-eighth of an inch deep on the broader end of the shell. They are slightly glossed and measure respectively 20.0 × 15 mm. and 20.5 × 10. Fig. 3, Plate III. (H. G.).]

41. *FRINGILLARIA CAPENSIS (Linn.). Cape Bunting.

Very rare in Albany, becoming more plentiful towards Cradock.

42. FRINGILLARIA TAHAPISI (Smith). Rock Bunting.

Scarce. A clutch of eggs was taken at Blue Krantz. We took several clutches in the O. R. C. (at Springfontein and Brandfort), and in each case—both in Albany and the O. R. C.—the nest was cup-shaped and composed of grass lined with fine fibre and hair, and was placed in a hollow in the ground beneath an overhanging stone on a rocky hill-side. The eggs, without exception, were “of a nearly ‘ovate’ shape, the ground-colour being greenish-white, spotted all over with purplish-brown and lavender; the spots are generally rather large, also there are many small ones and dots, the purple-brown spots are crowded over the larger end of the shell. They measure 18×12.5 mm.” Fig. 1, Plate III. (H. G.)

43. *PYRRHULAUDA AUSTRALIS (Smith). Dark-naped Lark.

Not uncommon at times.

44. PYRRHULAUDA VERTICALIS (Smith). Grey-backed Lark.

An occasional visitor. ♂, December 1905. Previously only recorded from Northern Cape Colony.

45. MIRAFRA AFRICANA, Smith. Rufous-naped Lark.

Fairly common.

46. *MIRAFRA APIATA (Vieill.). Bar-tailed Lark.

Not uncommon.

47. TEPHROCORYS CINEREA (Gmel.). Red-capped Lark.

Fairly common on the veld proper.

48. *CERTHILAUDA SEMITORQUATA, Smith. Grey-collared Lark.

Not common.

49. CERTHILAUDA ALBOFASCIATA, Lafr. Rufous Long-billed Lark.

Not uncommon.

50. *MACRONYX CAPENSIS* (Linn.). Orange-throated Long-claw.

Common.

51. **ANTHUS CHLORIS*, Licht. Small Yellow-tufted Pipit.
Not common ; there are specimens in the Albany Museum obtained in the Division.

52. *ANTHUS PYRRHONOTUS* (Vieill.). Cinnamon-backed Pipit.

Fairly common.

53. *ANTHUS RUFULUS*, Vieill. Lesser Tawny Pipit.

Common.

54. *MOTACILLA VIDUA*, Sundev. Pied Wagtail.

Scarce.

55. *MOTACILLA LONGICAUDA*, Rüpp. Grey-backed Wagtail.

Scarce, but resident and breeding.

56. *MOTACILLA CAPENSIS*, Linn. Cape Wagtail.

Very common.

57. *PROMEROPS CAFER* (Linn.). Cape Long-tailed Sugar Bird.

Fairly common in the unwooded valleys. They are, however, becoming scarcer on account of the grass-fires which destroy so many nests, these birds being Winter breeders, nesting in June and July.

58. *NECTARINIA FAMOSA* (Linn.). Malachite Sunbird.

Fairly common. Nests from November to January. It becomes more plentiful in Upper Albany. In April and May they congregate in large numbers, feeding on the flowers of aloes &c., but never fly in flocks. They moult in the Autumn.

59. *CINNYRIS AFER* (Linn.). Greater Double-collared Sunbird.

Very common throughout Albany. The top branches of

an Acacia is a favourite site for its nest. Like other Sunbirds, this species is a frequent host of *C. klaasi* (Bronze Cuckoo).

60. *CINNYRIS CHALYBEUS* (Linn.). Lesser Double-collared Sunbird.

Not nearly so common as the preceding species until the vicinity of Port Alfred and the seaboard, where the position is reversed, it being the commoner species.

61. *CINNYRIS AMETHYSTINUS* (Shaw). Black Sunbird.
Common.

62. *CINNYRIS VERREAUXI*, Smith. Mouse-coloured Sunbird.

Formerly very common, but the nests have become scarce of recent years. We were extremely lucky in finding two on the 4th January, 1907, containing two eggs each. The nest is large for the size of the bird, and almost invariably hung from a branch of a tree growing close beside a krantz in a kloof.

63. **ANTHROBAPHES VIOLACEA* (Linn.). Orange-breasted Sunbird.

Rare in Albany, but not at all uncommon in Port Elizabeth and Uitenhage. Its range is given in Selater's Check-list as Western Cape Colony, but Stark (vol. i.) includes the Eastern Province.

64. *ANTHROTHREPTES COLLARIS* (Vieill.). Collared Sunbird.

Very common, nesting in the kloofs: nest usually about six to ten feet above the ground, and much like that of *C. verreauxi*, but very much smaller.

65. **ZOSTEROPS VIRENS*, Bp. Green White-eye.
Not common.

66. *ZOSTEROPS CAPENSIS*, Sundev. Cape White-eye.
Very common.

No fresh eggs were taken in January 1907—only hard-sat eggs and young birds in various stages of growth being found.

67. *PARUS CINERASCENS*, Vieill. Grey Tit.

Fairly common.

68. *PARUS NIGER*, Bonn. & Vieill. Black Tit.

Fairly common ; nesting in holes of trees from November to February, after which they gather into small flocks.

69. *ÆGITHALUS MINUTUS*, Shaw. Cape Penduline Tit.

Fairly common in Upper Albany, though only sparingly found close to Grahamstown. The nest is often made of the cotton-like seeds of several of the local wild plants, and is a very firm felt-like structure. In localities where sheep are plentiful the nest is made of wool and is then exceedingly strong.

70. *LANIUS COLLARIS*, Linn. Fiscal Shrike.

Very common everywhere.

71. *LANIUS COLLURIO*, Linn. Red-backed Shrike.

Not uncommon in Upper Albany from November to March. We have a suspicion that it breeds here occasionally, but have not *proved* this satisfactorily as yet.

72. *TELEPHONUS SENEGALUS* (Linn.). Black-headed Bush Shrike.

Very common. Nest often placed between two aloe-leaves. The eggs are of a blunt "*ovate*" shape, with the ground-colour creamy-white, the larger end profusely streaked and scrawled with reddish and lavender, the former tint prevailing ; on the lower part of the shell the lavender colour almost disappears, and the red takes the form of longitudinal and narrow elongate spots intercepted with smaller ones evenly distributed, but leaving the ground-colour quite conspicuous. It measures 25×18.5 mm. Fig. 11, Plate III.

73. *TELEPHONUS TCHAGRA* (Vieill.). Tchagra Bush Shrike.

Fairly common. The nest resembles that of *T. senegalus*, but is smaller. The eggs—usually three in number—are of an "*ovate*" shape, the ground-colour creamy white slightly tinged with lavender, spotted and streaked with underlying lavender of a rather light shade, and in addition there are oblique dark purple-brown streak-like spots fairly evenly distributed, forming on the larger end an indistinct area but

leaving the extreme pointed end unspotted. It is somewhat glossy and measures $23\cdot5 \times 18\cdot5$ mm. Fig. 12, Plate III.—N.B. This egg agrees very well with fig 7, plate xiii. Cat. Birds' Eggs in Brit. Mus. vol. iv., where it is named *Pomatorhynchus senegalus* (Linn.), p. 293, and stated to come from Natal & South Africa.* (H. G.)

This bird has the same peculiar whistle—two notes ascending followed by the same in a descending scale; in habits it also resembles *senegalus*. It frequents open bush-veld, but it is a shy bird: although one may hear it calling, it is often difficult to obtain a sight of the whistler, as it creeps through the bush and flies away on the opposite side before one can get near enough to see it.

73. *DRYOSOPUS CUBLA* (Shaw). Lesser Puff-back Shrike.

Fairly common in the wooded kloofs. The nest is a neat cup-shaped structure of root and fibres, the outside being usually composed of the strips of the palm-like leaves of a *Dracena* sp.?, thickly matted with cobwebs, and always built round the fork or branch on which it is placed. The eggs are usually three in number and of a pinkish-white ground-colour, thickly spotted at the obtuse ends with small dots of deep pinkish brown. The nests are frequently right on the top fronds of some high forest tree, and are very difficult to locate, and often as difficult to get at when found.

Two males—presumably young birds, although the testes were fully developed—were procured in June 1906, and were identical with the female in full plumage, except that the underparts were a little more fulvous; irides hazel-brown.

74. *DRYOSOPUS RUFIVENTRIS* (Shaw). Greater Puff-back Shrike.

Common in the bush-veld, building a very shallow nest of rootlets and small twigs in the centre of a thick bush.

75. *LANIARIUS GUTTURALIS* (P. L. S. Müll.). Bakbakiri.

Exceedingly common. Nests of this bird containing eggs are found at all times of the year.

* [The eggs of *senegalus* can never be confused with *tehagra*, differing considerably.—A. II.]

76. *LANIARIUS RUBIGINOSUS* (Sundev.). Ruddy-breasted Bush Shrike.

Not uncommon in bush country. Its call-notes, though simple, are most beautifully liquid. It is a very shy bird and most difficult to see, although one hears its beautiful call all through the summer months.

The nest is very small and almost flat and so slight that one can see the eggs through it. The eggs—new to science—are of a blunt “*ovate*” shape (the largest diameter being almost in the middle of the longitudinal axis. The ground-colour is of a light greyish hue, very slightly inclining to buff; there is a broad and well-marked zone on the larger end of the shell formed by largish and smaller spots of dark and light lavender and brown; the general run of the spots are somewhat ovate, but with irregular edges, the markings running almost parallel to the shell’s longest axis, the pointed end of the egg being only sparingly spotted, whereas the broad end is covered with spots forming a zone. The slightly glossed ground-colour is conspicuous. It measures 23.5×17 mm. Fig. 10, Plate III. (H. G.)

This clutch was taken at Blue Krantz on the 10th January, 1895. In addition to the clutches in our respective collections, the Transvaal Museum also possesses a clutch taken by us.

77. *LANIARIUS OLIVACEUS* (Shaw). Olive Bush Shrike.

This bird only appears here sparingly and occasionally—usually during December to March. During January 1907 no specimens were seen, but in 1906 several were observed and collected. They are very local, frequenting Howieson’s Poort and the “Mountain Drive.”

78. *LANIARIUS MARAISII*, W. L. Sclater. Knysna Bush Shrike.

A very shy bird, *frequenting the bush-veld*, but not the kloofs. Roy Ivy shot a specimen during the nesting-season of 1892, which was exhibited at a meeting of the Eastern Province Naturalists’ Society, but was taken to be the young of *L. rubiginosus*. Since then we have obtained several more specimens, on each occasion *during the nesting-season*. There

seems little doubt that it is a distinct species, but more *field* work is required here: the theorising of "cabinet" naturalists will not help us to a clear and certain understanding in the matter.

79. LANIARIUS SULPHUREIPECTUS (Less.). Orange-breasted Bush Shrike.

Scarce. The specimen in the collection is from the border, on the Peddie side.

80. LANIARIUS STARKI, W. L. Sclater. Southern Grey-headed Bush Shrike.

Scarce.

81. PYCNONOTUS BARBATUS LAYARDI, Gurney.†

P. layardi, W. L. Scl. Check-list, p. 219.

This is the common form of Bulbul in Albany.

82. PYCNONOTUS CAPENSIS TYPICUS (Linn.). Cape Bulbul. Not uncommon in Lower Albany.

83. *PYCNONOTUS CAPENSIS NIGRICANS (Vieill. & Hart.). Black-fronted Bulbul.

Rare. Upper Albany. This bird can easily be recognised by its reddish-orange eyelids.

84. ANDROPADUS IMPORTUNUS (Vieill.). Sombre Bulbul.

Very common. The nest is a very shallow structure and invariably contains two eggs of a creamy grey ground prettily marbled with very pale and dark purple-brown blotches.

85. *PHYLLOSTROPHUS CAPENSIS, Swains. Cape Bristle-necked Bulbul.

Scarce. Lower Albany.

The nest is a coarse structure compared with that of *importunus*, and is composed of grass and twigs, covered

† [Dr. Hartert, in an article titled "Miscellanea Ornithologica," *very clearly* works out the genus *Pycnonotus*, for which South African ornithologists owe him a debt of gratitude. I must confess for one that this genus puzzled me, and I had already commenced, in conjunction with my friend Ivy, to collect material with a view to a better understanding of the "*Pycnonotus*." A full review will appear in the next No. of the Journal, as this No. cannot be delayed any longer.—A. K. H.]

outside with a thin layer of moss and lined with fine grass and rootlets. The eggs are two in number and resemble those of *importunus*, but are usually darker both in ground-colour and mottling. Nests in December.

86. *PARISOMA SUBCÆRULEUM*, Vieill.

Not uncommon in Upper Albany.

The eggs are three in number and of a white ground marked with light and dark sepia blotchings, chiefly at the obtuse end.

87. *PHYLLOSCOPUS TROCHILUS* (Linn.).

Several specimens obtained, so it can hardly be rare.

88. **ACROCEPHALUS BÆTICATUS* (Vieill.).

A scarce bird; recorded from Grahamstown by Layard.

89. *BRADYPTERUS BRACHYPTERUS* (Vieill.). Stripe-throated Reed Warbler.

Not uncommon.

90. **EREMOMELA FLAVIVENTRIS* (Burch.). Yellow-bellied Bush Warbler.

Not uncommon in the bush.

91. *CAMAROPTERA OLIVACEA* (Vieill.). Green-backed Bush Warbler.

Fairly common. Locally known around Grahamstown as the Tailor Bird, as it constructs a beautiful semi-dome-shaped nest of fibres and fern-stems, lined externally with moss and internally with white vegetable down. It is usually situated in a green bush and has the leaves of the bush in the immediate vicinity of the nest stitched to it with fine fibre-like down from seed-pods, &c., and possibly cobweb. A nest † taken by us on the 7th January, 1907, contained three pure white hard-set eggs. The unique bleating call so well described by Dr. Stark was very much in evidence when we robbed the nest, and one of the parent birds was shot, which was sent home to make identification certain, in view of Dr. Stark's statements regarding the nidification of this species on page 113, vol. ii. 'Birds: Fauna of South Africa.'

† Now in the Transvaal Museum.

Dr. P. L. Selater very kindly named it for us, thus confirming our own identification of the species. When the nest is detached from its position and held in the hand it has the appearance of a deep cup, but it is placed in the bush at an angle and consequently becomes purse- or pocket-shaped.

92. *APALIS THORACICA* (Shaw & Nodder). Bar-throated Warbler.

Fairly common.

93. **APALIS SCITA* (Vieill.). Fairy Warbler.

Rare.

94. *CHLORODYTANEGLECTA*, Alex. Eastern Black-breasted Bush Warbler.

Not uncommon in Albany. The Transvaal Museum contains several specimens besides those in our private collections. We have collected a good many specimens, and in no case has the male a black spot on the breast described in Stark & Selater (ii. p. 125). Of course a mistake can be made in sexing a bird, particularly when not fully adult, but in one instance we collected a pair from a nest. This matter must, however, remain in abeyance for the present, until we have collected more material. A nest was found at Blue Krantz which was merely a cavity in a bunch of *Ptylandsia* lined with vegetable down, and contained two eggs, of a "somewhat pointed 'ovate' shape, of a bright light bluish-green ground-colour, with some black hair-lines and scrawls over the larger end, with a few roundish spots of black and chestnut-brown, the spots being about the size of a large pin's head, leaving the lower part of the shell unmarked; it is somewhat glossed, and measures 15 x 11 mm. Fig. 5, Plate III." (H. G.)

95. **PRINIA HYPOXANTHA* (~~Ayres~~) ^(Sharpe) Saffron-breasted Wren Warbler.

Scarce.

96. *PRINIA MACULOSA* (Bodd.). Cape Wren Warbler.

Fairly common.

97. *PRINIA MYSTACEA*, Rüpp. Tawny-flanked Wren Warbler.

Not uncommon at times. This is a new record for Cape Colony. It breeds near Grahamstown.

98. **SPILOPTILA OCLARIA* (Smith). Rufous-eared Wren Warbler.

Scarce.

99. *CISTICOLA FULVICAPILLA* (Vieill.). Tawny-headed Grass Warbler.

Common.

100. *CISTICOLA ABERRANS* (Smith). Smith's Grass Warbler.
Not uncommon.

101. *CISTICOLA TERRESTRIS* (Smith). Wren Grass Warbler.

Scarce. We have a specimen in our collection.

102. *CISTICOLA SUBRUFICAPILLA* (Smith). Grey-backed Grass Warbler.

Fairly common.

103. *SPHENÆACUS INTERMEDIUS*, Shelley. Eastern Province Grass Bird.

Not uncommon.

A nest taken on the 19th October, 1904, near Grahamstown, contained two white elongated ovate eggs.

104. *TURDUS OLIVACEUS*, Linn. Cape Thrush.

Common.

105. *MONTICOLA RUPESTRIS* (Vieill.). Cape Rock Thrush.
Very common; affecting the rocky kranzes and hill-sides.

106. *MONTICOLA EXPLORATOR* (Vieill.). Sentinel Rock Thrush.

Common; affecting similar localities to the foregoing species. Its eggs are, as Stark says, very similar to those of *M. rupestris*, being, however, a little smaller. It seems hardly feasible to us that this bird, closely allied to *rupestris* as it is, should lay *blue* eggs (as described by Major Sparrow), which are characteristic of the Chats.

107. MYRMECOCICHLA FORMICIVORA (Vieill.). Ant-eating Chat.

Not uncommon on the high veld.

108. MYRMECOCICHLA BIFASCIATA (Temm.). Buff-streaked Chat.

Common on the rocky hill-sides near Grahamstown.

109. PRATINCOLA TORQUATA (Linn.). S. A. Stone-Chat.

Not common.

110. SAXICOLA PILEATA (Gmel.). Capped Wheatear.

Not uncommon.

111. SAXICOLA MONTICOLA (Vieill.). Mountain Chat.

Scarce. Upper Albany.

112. SAXICOLA FAMILIARIS, Stephens. Familiar Chat.

Not uncommon.

113. *EMARGINATA SINUATA (Sundev.). Sickle-winged Chat.

Scarce in Albany. The eggs are of a somewhat blunt *orate* shape, the ground-colour being of a fairly light bluish-green tint, with some small very faint greyish-buff spots on the larger end forming an indistinct cap. It is very slightly glossed and measures 21.5×15 mm. Fig. 2, Plate III. (H. G.)

114. THAMNOLEA CINNAMOMEIVENTRIS (Lafr.). White-shouldered Bush Chat.

Fairly common on the krantzes in the Bush. The first nest taken was at the Howieson's Poort on November 19th, 1892, with 3 eggs, which were similar to the specimen on the coloured plate in this Journal, vol. ii. part 1. They seem to invariably make use of old Swallows' nests.

115. COSSYPHA BICOLOR (Sparrm.). Noisy Robin Chat.

Fairly common in the thick bush, where its musical imitation of various bird-calls is quite a feature. Amongst the birds imitated we heard the screech of the Crowned Hawk Eagle. All eggs found by us were of a clear glossy chocolate colour, although when hard-sat they take an olive tinge, which could, however, hardly be called olive-green. In

justice to Major Sparrow, we must draw attention to the fact that other members of the genus lay eggs of both shades, so there is no reason why olive-green eggs of this species should not occasionally occur. A nest taken on 7th January was built in a hollow of an overhanging tree-trunk.*

[One egg from Grahamstown is of a regular "oval" shape, of a uniform chestnut-russet-brown [very near to Ridgw. N. C. pl. iii. no. 16 (1886)]. It is highly glossed and measures 23 × 18 mm. Fig. 7, Plate III. (H. G.)]

116. *COSSYPHA CAFFRA* (Linn.). Cape Robin Chat.
Common.

117. *COSSYPHA SIGNATA*, Sundev. Brown Robin Chat.
Not uncommon in the thick bush. *a.* *Juv.* ♀, Jan. 1906.

The young bird has the top of the head and back of a spotted appearance, owing to the feathers (which have a rufous tinge) having black tips; these are so broad on the forehead and crown as to give these regions a much darker appearance than the rest of the plumage. The primaries are darker than those of the adult, but have similar white markings. Breast of a streaky smeared appearance, owing to many of the feathers being tipped and edged with sooty black—this is so profuse on the upper chest as to form a broad indistinct band,—becoming sparsely scattered towards the belly. Only the outer tail-feathers have white tips, and the bird is smaller than the adult. Two clutches of each three eggs, taken in January 1906, were greenish white, covered with pink-grey blotches, chiefly at the obtuse end.

118. *TARSIGER STELLATUS* (Vieill.). White-starred Bush Robin.

Very rare. One specimen, December 1895.

119. *TARSIGER SILENS* (Shaw).
Common.

120. *ERYTHROPYGIA LEUCOPHRYS* (Vieill.). White-browed Ground Robin.

Common. A bird of the open bush.

* We have since taken eggs which are of a decided greenish tinge.

Stark describes the eggs of this bird as being spotted with *light* reddish brown. We think this is a clerical error, as the eggs are invariably speckled with *dark* spots. The nest is always built of rotten dead grass and leaves, no new material being used except the lining, which is composed of fine fibres.

121. *ERYTHROPYGIA CORYPHÆUS (Linn.). Cape Ground Robin.

Not uncommon. Previously only recorded from Western Cape Colony.

The nest is not always placed on the ground, being sometimes placed in a bush a few inches above the surface. The eggs vary a little, being sometimes lightly blotched, and at others so profusely that hardly any ground-colour is visible.

122. LIOPTILUS NIGRICAPILLUS (Vieill.). Bush Blackcap.

Sparingly met with in the deep wooded kloofs, or on heavily wooded hill-sides, from November to March. It apparently migrates to higher altitudes in Winter.

123. ALSEONAX ADUSTA (Boie). Dusky Flycatcher.

Very common. It frequents high krantzies in deep kloofs and hill-sides. It constructs a neat little nest, covered on the outside with lichen, generally in a small cavity on the face of a krantz; sometimes it builds in a hollow in the bark on the face of a tree-trunk. Since the hill-sides have been planted with pines and gums this bird has altered its habits, and will build in a fork of a branch, or on the top of a bundle of debris.

124. PACHYPRORA CAPENSIS (Linn.). Cape Flycatcher.

Common. Affects the wooded valleys near watercourses.

125. PACHYPRORA MOLITOR (Hahn & Kuster). White-flanked Flycatcher.

Fairly common, keeping more to the open bush country than the wooded kloofs. Its nest is a beautiful example of protective resemblance and takes a good deal of finding.

126. *PACHYPRORA PRIRIT, Levaill. Pririt Flycatcher.

Extremely rare. The occurrence of this bird in Albany is

not clear, as it is supposed to be the Western "geographical" form of *molitor*, yet its identification is easy, although it closely resembles the latter bird. A pair were discovered nesting at Blue Krantz in January, and it was the difference in the eggs that drew our attention to the bird. These were "of a very blunt 'ovate' shape; the ground-colour is light bluish green, spotted all over with brown and lavender, the spots being generally fairly large with many small spots and dots on the larger end, where they form a fairly well-marked zone. They are slightly glossed and measure 16.5×13 mm." (H. G.)

127. *TROCHOCERCUS CYANOMELAS* (Vieill.). Blue-mantled Flycatcher.

Not common.

128. *TERPSIPHONE PERSPICILLATA* (Swains.). Paradise Flycatcher.

Very common in the wooded valleys. We discovered no less than five nests containing eggs on January 5th, 1907, several being quite fresh.

129. *DICRURUS AFER* (Licht.). Fork-tailed Drongo.

Very common. Their eggs vary considerably in colour, shape, and size. In addition to those described by Stark, we have taken pure white eggs.

130. *CAMPOPHAGA NIGRA*, Vieill. Black Cuckoo Shrike.

Fairly common. One egg from Grahamstown is of an 'ovate' shape; the ground-colour is light greenish-blue with a slight tinge of yellow, fairly evenly spotted all over with dark purple and dark lavender, the spots being roundish and the largest about the size of a medium-sized pin's head; the small spots are numerous, there is but little indication of a zone, and the slightly glossed ground-colour is not hidden by the spots. It measures 24.75×18 mm. Fig. 9, Plate III. (H. G.)

131. **CAMPOPHAGA HARTLAUBI*, Salvad. Yellow-shouldered Cuckoo Shrike.

Not common. Dr. Stark says the eggs are indistinguishable from those of *C. nigra*, but in all clutches taken by us the ground-colour is greyer. [They are usually of a

“short ovate shape, the ground-colour being light greenish-buff with small spots of blackish and slightly larger ones of light and dark lavender forming an indistinct zone; these spots are fairly evenly distributed over the rest of the shell, leaving the slightly glossed ground-colour conspicuous. They measure 23·5 × 18 mm.” Fig. 6, Plate III. (H. G.)]

132. *GRAUCALUS CÆSIUS* (Licht.). Grey Cuckoo Shrike.

Found in Albany sparingly during the months of November to May. It frequents the top branches of high forest trees.

133. **COTILE PALUDICOLA* (Vieill.). South African Sand Martin.

Not uncommon.

134. **PTYXOPROGNE FULIGULA* (Licht.). Rock Martin.

Common. It builds sometimes in caves.

135. *HIRUNDO RUSTICA*, Linn. European Swallow.

Common migrant.

136. *HIRUNDO ALBIGULARIS*, Strickl. White-throated Swallow.

Common.

137. *HIRUNDO DIMIDIATA*, Sundev. Pearl-breasted Swallow.

Common.

138. *HIRUNDO CUCULLATA*, Bodd. Larger Stripe-breasted Swallow.

Very common. These Swallows only left Grahamstown on 25th July, 1906, with the next species.

139. *HIRUNDO PUELLA*, Temm. & Schl. Smaller Stripe-breasted Swallow.

Very common.

140. **PETROCHELIDON SPILODERA* (Sundev.). South African Cliff Swallow.

Fairly common.

141. **PSALIDOPROCNE HOLOMELÆNA* (Sundev.).

Fairly common. In the Albany District the nest is invariably made of *Ptylandsia* (old-man's-beard moss).

142. UPUPA AFRICANA, Bechst. South African Hoopoe.
Fairly common.

143. IRRISOR VIRIDIS (A. A. H. Licht.). Wood Hoopoe.
Common. Length of ad. ♂ $13\frac{1}{2}''$.
 " " ♀ $13\frac{1}{16}''$.
 " of juv. $12\frac{7}{8}''$.

Two young birds, procured in February 1906, have the purple gloss very faint on the head; back with violet and green reflections. Lower back and underparts without any gloss.

The egg is of an "elliptical-ovate shape, of a uniform deep greenish cærulean-blue [a little darker than Ridgw. N. C. pl. ix. no. 23 (1886)]; it is sparingly and very indistinctly spotted all over with whitish-grey pin-points; the shell is almost without gloss; it measures 27×17.5 mm." Fig. 8, Plate III. (H. G.)

144. *CYPSELUS AFRICANUS, Temm. White-bellied Swift.
Not uncommon. We have specimens in our respective collections.

145. CYPSELUS CAFFER, Licht. White-rumped Swift.
Common.

146. CAPRIMULGUS EUROPÆUS, Linn. European Nightjar.
Fairly common.

147. CAPRIMULGUS RUFIGENA, Smith. Rufous-cheeked
Nightjar.
Fairly common.

148. CAPRIMULGUS PECTORALIS, Cuv. South African
Nightjar.

This is the commonest form of Nightjar around Grahams-town.

149. *CORACIAS GARRULUS, Linn. European Roller.
Scarce visitor. We have a specimen in our collection taken in January 1907.

150. *MEROPS APIASTER, Linn. European Bee-eater.
Rare in the Albany District.

151. **MEROPS PERSICUS*, Pallas. Blue-checked Bee-eater.
Rare.

152. *CERYLE RUDIS* (Linn.). Pied Kingfisher.
Common at times. It is an exceedingly common bird at
Port Alfred.

153. *CERYLE MAXIMA* (Pallas). Giant Kingfisher.
Not uncommon. Feeds largely on land-crabs.

154. *ALCEDO SEMITORQUATA*, Swains. Half-collared
Kingfisher.

Not uncommon towards Blue Krantz, where it breeds freely.

155. *CORYTHORNIS CYANOSTIGMA* (Rüpp.). Malachite
Kingfisher.

Very uncommon of late years. Ten years ago it was fairly
common, nesting near Grahamstown.

156. **ISPIDINA NATALENSIS* (Smith). Natal Kingfisher.
Rare visitor.

157. *HALCYON ALBIVENTRIS* (Scop.). Brown-hooded
Kingfisher.

Common. The young birds have black bills, but assume
the red colour with the first moult. The red begins with a
faint tinge on the gape, which gradually spreads towards the
tip. The young are also darker on the throat and more
striped than the adult.

158. *COLIUS STRIATUS*, Gmel. Speckled Mouse-Bird.

Very common. This species nests all the year round,
laying four or five white eggs. Winter nests are, of course,
few and far between. In Albany the nest is usually
constructed of fine wild asparagus twigs and everlasting.

159. *COLIUS ERYTHROMELON*, Vieill. Red-faced Mouse-
Bird.

Not so common as the preceding species.

160. **BUCORAX CAFER*, Bocage. Brom-vogel.

Rare. Nests near Beaufort occasionally. Eggs very
strong with small granulations, white and deeply glazed.

161. *BYCANISTES BUCCINATOR* (Temm.). Trumpeter Hornbill.

Rare. Sometimes seen flying with *melanoleucus*. Feeds on beetles, scorpions, centipedes, &c.

162. *LOPHOCEROS MELANOLEUCUS* (Licht.). Crowned Hornbill.

Common, but very shy when nesting.

163. *HAPALODERMA NARINA* (Stephens). Narina Trogon.

Not common. Nests in holes in trees and lays pure white eggs.

164. *GEOCOLAPTES OLIVACEUS* (Gmel.). Ground Woodpecker.

Fairly common on the rocky sides of high hills. The nesting-holes are situated in the sides of dongas and kranzes, also in cuttings. They lay four glossy white eggs.

165. *CAMPOTHERA NOTATA* (Licht.). Knysna Woodpecker. Fairly common, nesting in dead trees.

166. *DENDROPICUS CARDINALIS* (Gmel.). Cardinal Woodpecker.

Fairly common.

167. *THIRIPIAS NAMAQUUS* (Licht.). Bearded Kingfisher. Scarce.

168. *MESOPICUS GRISEOCEPHALUS* (Bodd.). Olive Woodpecker.

Fairly common.

169. *IYNX RUFICOLLIS*, Wagler. South African Wryneck.

Rather rare in the neighbourhood of Grahamstown. Commoner in Upper Albany. Nests in holes in trees, but since the introduction of the so-called American aloe it has become very partial to the flower-stems of this plant as a nesting-site.

An egg from Grahamstown (December 1895) is of an "elliptical oval" shape, slightly pointed at the larger end and somewhat blunt or rounded at the smaller end. The ground-colour is creamy white with the merest tinge of lavender-buff.

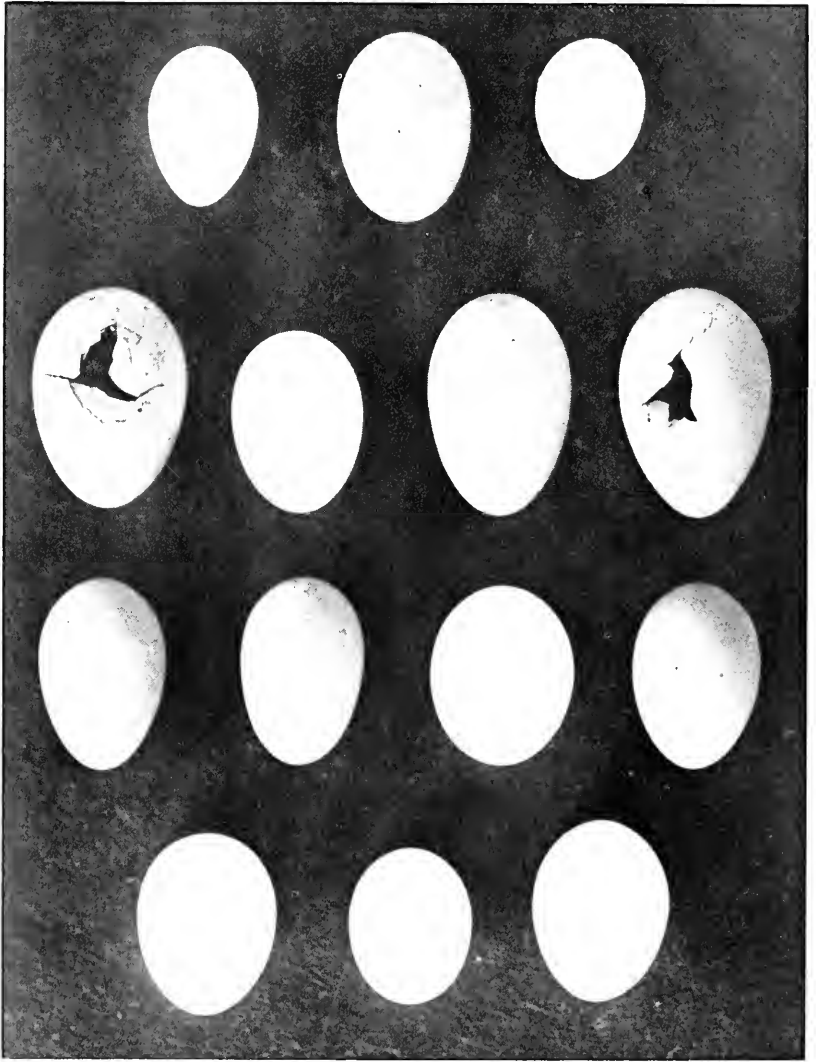


Photo. R. H. Ivy.]

EGGS OF INDICATORS WITH THOSE OF HOSTS.

The shell is rather glossy and with faint traces of transverse graining. It measures 24×15.75 mm.

170. INDICATOR SPARRMANI, Steph. Sparrman's Honey-Guide.

Not common. An egg was taken from a nest-hole of *Irisor viridis* (vide Plate IV. fig. 3). For further notes see 'Ibis,' January 1901.

[One egg from Grahamstown is of a regular "oval" shape, pure creamy-white with a mere tinge of lavender-buff. The surface of the shell is like "smooth marble," of an extremely fine grain and only slightly glossed. It measures 25×19.5 mm. Fig. 18, Plate III. (H. G.)]

171. *INDICATOR MAJOR, Steph. Yellow-throated Honey-Guide.

Common. Utilises the nest-hole of *Spreo bicolor* usually as a repository for its egg. It seems to us that all the Honey-Guides break the eggs of the foster-parent to make room for their own, wherever possible. Figs. 2nd row, Plate IV., show how a clutch of *Spreo bicolor* was smashed up. They are very persistent in "commandeering" the nest-holes of other birds, as they are generally fiercely attacked by the foster-parents. When they do not succeed in breaking the eggs, the young bird, which, as we have shown in this Journal, pp. 1 to 5, is furnished with a strong pair of hooks, very probably ejects its foster-brethren while the old birds are away foraging for the ravenous young. There is a specimen in our collection.

172. *INDICATOR VARIEGATUS, Lesson. Scaly-throated Honey-Guide.

Scarce.

173. INDICATOR MINOR, Stephens. Lesser Honey-Guide.

Fairly common. An egg was taken from a nest-hole of *Lybius torquatus* (see figs. 4th row, Plate IV.).

174. LYBIUS TORQUATUS (Dumont). Black-collared Barbet. Fairly common.

175. TRICHOLEMA LEUCOMELAS (Bodd.). Pied Barbet.
Fairly common.

176. BARBATULA PUSILLA (Dumont). Tinker Bird.
Common.

177. CUCULUS SOLITARIUS, Steph. Red-chested Cuckoo.
The egg is of a peculiar chocolate-brown colour and
measures 26×19 mm.

178. CUCULUS CLAMOSUS, Lath. Black Cuckoo.
Lays a white egg, measuring 26×21 mm.

179. *CHRYSOCOCCYX SMARAGDINEUS (Swains.). Emerald
Cuckoo.
Rare in Albany.

180. CHRYSOCOCCYX KLAASI (Steph.). Bronze Cuckoo.
Common. This is the commonest of the Gold Cuckoos in
the Albany Division and apparently a partial resident, as
several specimens were procured in the heart of winter.
There are specimens in the Transvaal Museum procured in
June 1906, so this species does not appear so migratory as
is generally supposed †.

One egg from Grahamstown is of a blunt "*elongated ovate*"
shape, the ground-colour being light bluish green, spotted
with underlying but not very numerous reddish-brown
blotches and surface-markings about the size of a pin's head,
or even smaller; the spots form an open zone and diminish in
number toward the smaller end, where they finally cease. It
is somewhat glossy and measures 23.75×14.0 mm. Fig. 14,
Plate III. (H. G.).

181. CHRYSOCOCCYX CUPREUS (Bodd.). Didric Cuckoo.

Common. Our remarks on the habits of the Gold Cuckoos
were published in a separate paper in the June, 1906, number
of this Journal.

[One egg from the Crocodile River north of the Magalies-
berg, Pretoria District, Transvaal (December 31, 1906), is of
a somewhat "*ovate*" shape, the ground-colour being uniform

† *Vide* also L. E. Taylor, Bull. B. O. C. cxviii.

whitish with a shade of blue; the shell is finely grained and somewhat glossy; it measures 21×14.5 mm. Fig. 15, Plate III.

A second egg is quite different from the above; it is of a blunt "*elongate ovate*" shape very slightly inclining towards pyriform, of a whitish blue-grey ground-colour, spotted with underlying lavender blotches and blackish lilac surface spots of larger and smaller size. These markings form a fairly large and compact zone, the spots becoming more scattered towards the pointed end, which is unspotted. It is only slightly glossed and measures 21.2×14.5 mm. Fig. 16, Plate III.

A third egg of the same species is quite different from the two above described; it is of a regular "*elliptical oval*" shape, the ground-colour light bluish green, evenly marked all over with underlying lavender spots of smaller and larger size; the surface-spots are dark brown, the ground-colour though clearly seen is not conspicuous; it is but slightly glossed and measures 21.5×14.5 mm. Fig. 17, Plate III. (H. G.)]

182. COCCYSTES GLANDARIUS (Linn.). Great Spotted Cuckoo.

Fairly common migrant.

183. COCCYSTES JACOBINUS (Bodd.). Black-and-White Cuckoo.

Fairly common. An egg was taken on January 16th, at Koonap, which was of a rounded ovate shape and measured 27×22 mm., and of a glossy white colour.

184. COCCYSTES HYPOPINARIUS, Cab. & Heine. Black-and-Grey Cuckoo.

Fairly common. It is doubtful whether these two birds (this species and the preceding) should be specifically separated, as they seem to us to pretty well cover the same range.

185. COCCYSTES SERRATUS (Sparrm.). Black-crested Cuckoo.

Fairly common. On January 16th we took an egg from a nest of *Andropadus importunus*; it is not as glossy as that of *C. jacobinus* and more rounded, being 26×22 mm.

186. *CENTROPUS BURCHELLI*, Swains. Burchell's Coucal.
Fairly common.

187. *CENTROPUS SUPERCILIOSUS*, Hempr. & Ehren. White-browed Coucal.

Scarce.

188. *TURACUS CORYTHAIX* (Wagler). Lourie.

Common in the thickly wooded kloofs. We can find no mention in Selater's vol. iii. 'Birds' (Fauna of S. Africa) of any difference in the plumage of the young bird. We procured several fully-fledged young birds flying in company with the adults on the 6th January of this year, and noticed the following facts:—They are *considerably* smaller than the adult, and have the beautiful red colouring only on eight primaries, as against fifteen primaries and secondaries in the fully adult bird. The red patches are also very much smaller, being only narrow bands of about one inch in length by a quarter of an inch in breadth on the inner primaries. It looks as if this red colouring-matter spreads as the bird gets older, as we counted red feathers varying in number from 8 to 15 on different birds. The bill is dark red—almost black in some specimens. According to our experience, we should *not* say that rain washes out the red from the living bird. It becomes decidedly paler, but we have *never* seen it wash out entirely. Several specimens, both adult and juvenile, were procured on January 8th during heavy rain, and the forest was sodden, but the red colouring seemed as bright as ever. Regarding the theory that the colour can also be washed out with soap and water: this may be possible, but the soap would require to be strongly alkaline. We tried it with "Sunlight" soap, and failed! In old skins the red fades considerably. The copper content is there, as was proved by a friend—Mr. Ayers, a Chemist of the Dynamite Factory—who tested some of the feathers for us.

189. **PŒOCEPHALUS ROBUSTUS* (Gmel.). Red-shouldered Parrot.

Not common.

190. *STRIX FLAMMEA*, Linn. Barn Owl.
Fairly common.
191. **STRIX CAPENSIS*, Smith. Grass Owl.
Fairly common.
192. **ASIO CAPENSIS* (Smith). Marsh Owl.
Not uncommon.
193. *SYRNIUM WOODFORDI* (Smith). Bush Owl.
Not uncommon.
194. *BUBO CAPENSIS*, Smith. Cape Eagle Owl.
Not common.
195. *BUBO MACULOSUS* (Vieill.) Spotted Eagle Owl.
Common.
196. **BUBO LACTEUS* (Temm.). Giant Eagle Owl.
Scarce.
197. *SCOPS CAPENSIS*, Smith. Cape Scops Owl.
Scarce.
198. **FALCO MINOR*, Bp. South African Peregrine.
Scarce.
199. *FALCO BIARMICUS*, Temm. South African Lanner.
Not common.
200. *TINNUNCULUS RUPICOLUS* (Daud.). South African
Kestrel.
Common.
201. *TINNUNCULUS RUPICOLOIDES* (Daud.). Larger Kestrel.
Scarce.
202. *TINNUNCULUS NAUMANNI* (Fleisch.). Lesser Kestrel.
This is a scarce bird in Albany, although the Division was
on one occasion visited by a large flock.
203. **AQUILA VERREAUXI*, Less. Verreaux's Eagle.
Scarce.
204. **AQUILA RAPAX*, Temm. Tawny Eagle.
Scarce, but breeding.

205. **EUTOLMAËTUS PENNATUS* (Gmel.).

This bird was recorded from Grahamstown by Layard, but must be rare.

206. **EUTOLMAËTUS BELLICOSUS* (Daud.). Martial Eagle.
Scarce.

207. **SPIZAËTUS CORONATUS* (Linn.). Crowned Hawk Eagle.

Not uncommon. We saw the old birds soaring above the nest (photographed by Dr. Stark) on 7th January, 1907.

208. *LOPHOAËTUS OCCIPITALIS* (Daud.). Crested Hawk Eagle.

Scarce.

209. **HALIAËTUS VOCIFER* (Daud.). Sea Eagle.

Scarce.

210. *HELOTARSUS ECAUDATUS* (Daud.). Bateleur.

Scarce.

211. **CIRCAËTUS PECTORALIS*, Smith. Black-breasted Harrier Eagle.

This bird is recorded from Albany by Layard, but we have not seen it.

212. *BUTEO JAKAL* (Daud.). Jackal Buzzard.

Very common. The following are the complicated plumage changes of this species, so far as we have been able to work them out. We can conscientiously submit these remarks as the result of careful and lengthy observations made from captive specimens and skins of adults and chicks.

1st Stage.—The chick is covered with white down until about three weeks old, when the brown colouring of the feathers begins to show.

2nd Stage.—When about seven weeks old the chick loses nearly all its down, the coloration being as follows:—upper surface and tail earth-brown with creamy rufous edgings to many of the feathers; chest and throat dull rufous; bill dark horn; cere and legs yellow.—Young male at six weeks:



Photo, from life by R. H. Ivy.]

FEMALE JACKAL BUZZARD at Nest of S. A. Goshawk.

Throat, chin, lower chest, abdomen, thighs, tail-coverts, forehead, axillaries, and under wing-coverts still covered with white down. Upper chest dark rufous. A patch of light rufous on each side of breast gradually extending towards abdomen. Primaries deep earth-brown; secondaries and rectrices of the same deep earth-colour tipped with fawn-grey. Top of head, hind-neck, back, and upper wing-coverts deep earth-brown. Bill and claws dark horn; cere, legs and toes yellow. Irides soft grey.

3rd Stage.—When three months old both sexes assume a dull tobacco shade.

4th Stage.—At ten months many deep earth-brown feathers, almost black, appear amongst the somewhat rufous feathering, giving the bird a very patchy appearance; the irides then change to a soft ochre.

5th Stage.—Adult plumage is assumed when about fifteen months to two years of age by a moult extending over a period of several months, the new feathers appearing singly and irregularly. The full adult plumage is as follows:—

Male : On either side of the forehead a small white patch formed by the white bases of the feathers. The secondaries are banded with grey, the basal half of inner web white, and the tail is bright rufous with subterminal bands on some feathers and blotches of deep earth-brown on others. Rest of exposed portion of upper plumage *with closed wings* deep earthy brown, almost black, only the dark tips of the feathers showing. The feathers have white bases shading into rufous at the junction with the dark tips, which are mostly hidden by the overlapping feathers. Upper tail-coverts faintly edged with rufous, and the unexposed white bases are tinted with the same colour. The earth-brown primaries have the inner web white as far as the emargination. The secondaries are a beautiful silver-grey when first moulted, with narrow bands and broad tips of earth-brown. The silver-grey fades into white as the plumage becomes worn. Shafts of primaries white. Upper and under wing-coverts and axillaries deep earth-brown. Chin and throat white, extending by a narrow band to the rufous-coloured

breast.—On either side of this white strip the lower neck is uniform with the earth-brown of the back of the neck. Abdomen creamy rufous. Thighs and legs white with dark brown centres.

Female: There are no white patches on the forehead as in the male, and the tail-coverts are of a bright rufous tint with a subterminal band of earth-brown; the remainder of the upper plumage resembling that of the male. Chin and lower throat uniform with the earth-brown of the hind-neck. Chest and sides rufous. Abdomen and lower chest rufous, feathers with earth-brown centres and blotches, giving this portion of the plumage a banded appearance; most of these feathers also have white or rufous tips. The thighs and legs are similarly coloured to those of the male, being, however, a little darker. The hinder tail-coverts are rufous banded with earth-brown.

Irides of both sexes at adult stage ochreous yellow. Bill and claws dark horn. Cere, legs, and claws yellow.

213. **BUTEO DESERTORUM* (Grill). Steppe Buzzard.
Not common in Albany.

214. *ELANUS CÆRULEUS* (Desf.). Black-shouldered Kite.
A young specimen about two months old, dated May 1903, has the upper breast suffused with pale rufous.

215. *ACCIPITER MINULLUS* (Daud.). Little Sparrow Hawk.
Not common. This species nests in Double Kloof near Grahamstown.

216. *ACCIPITER RUFIVENTRIS*, Smith. African Sparrow Hawk.
Not uncommon.

217. *ACCIPITER MELANOLEUCUS*, Smith. Black Sparrow Hawk.
Scarce.

218. *ASTUR TACHIRO* (Daud.). African Goshawk.
Fairly common. The young bird is tinged on the cheeks, throat, and upper breast with pale rufous, which fades to pale



YOUNG JACKAL BUZZARDS (Buteo Jakal) in Nest.

Photo. from life by R. H. Ivy.]

buff as the bird gets older, and finally becomes white when fully adult.

219. MELIERAX CANORUS (Rislach). Chanting Goshawk.
Scarce.

220. *MELIERAX GABAR (Daud.). Gabar Goshawk.
Rare.

221. *MELIERAX NIGER (Bonn. & Vieill.). Black Gabar
Goshawk.
Very rare.

222. *CIRCUS MACRURUS (Gmel.). Pale Harrier.
Rare.

223. CIRCUS MAURUS (Temm.). Black Harrier.
Scarce.

224. POLYBOROIDES TYPICUS, Smith. Harrier Hawk.
Scarce.

225. *GYPS KOLBII (Daud.). South African Griffon
Vulture.

Formerly extremely common, but of recent years, probably owing to the "Poisoning Clubs," like *Corvus scapulatus*, becoming scarcer.

226. *OTOGYPS AURICULARIS (Daud.). Black Vulture.
Very scarce.

227. *SERPENTARIUS SECRETARIUS (Sparm.). Secretary
Bird.
Scarce.

228. *PLOTUS RUFUS, Lacep. & Daud. Snake Bird.
Occasionally met with on the Great Fish River.

229. *CICONIA ALBA (Linn.). White Stork.
A scarce visitor.

230. *CICONIA NIGRA (Linn.). Black Stork.
Scarce.

231. SCOPUS UMBRETTA, Gmel. Hammerhead.
Common.

232. *ARDEA CINEREA, Linn. Grey Heron.
Not common.
233. ARDEA PURPUREA, Linn. Purple Heron.
Not common.
234. *HERODIAS ALBA (Linn.). Great White Egret.
Occasionally met with on the Great Fish River.
235. *BUBULCUS IBIS (Linn.). Cattle Egret.
Not common.
236. ARDEOLA RALLOIDES (Scop.). Squacco Heron.
Not common.
237. NYCTICORAX GRISEUS (Linn.). Night Heron.
Scarce.
238. ARDETTA PAYESI, Hartl. Red-necked Little Bittern.
Scarce.
239. *GERONTICUS CALVUS (Bodd.). Bald Ibis.
Scarce.
240. HAGEDASHIA HAGEDASH (Lath.). Hadadah.
Not common and breeding in the Division.
241. *NETTOPUS AURITUS (Bodd.). Dwarf Goose.
Rare.
242. ALOPOCHEN ÆGYPTIACUS (Linn.). Mountain Goose.
Not uncommon and breeding.
243. *ANAS UNDULATA, Dubois. Yellow-bill Duck.
Scarce. Upper Albany only.
244. ANAS SPARSA, Smith. Black Duck.
Common everywhere.
245. PÆCILONETTA ERYTHRORYNCHA (Gmel.). Red-billed
Teal.
Scarce. Upper Albany.
246. VINAGO DELALANDII (Bp.). Green Fruit Pigeon.
Very rare. ♂, Grahamstown, December 1892.
247. COLUMBA PHÆNOTA, G. R. Gray. Speckled Pigeon.
Common.

248. COLUMBA ARQUATRIX, Temm. & Knip. Olive Pigeon.

Common in the bush.

249. TURTUR SEMITORQUATUS (Rüpp.). Red-eyed Dove.
Common.

250. TURTUR CAPICOLA, Sundev. Cape Turtle Dove.
Common.

251. TURTUR SENEGALENSIS (Linn.). Laughing Dove.
Not uncommon.

252. CENA CAPENSIS (Linn.). Long-tailed Dove.
Scarce.

253. TYMPANISTRIA BICOLOR, Reichenb. Tambourine Dove.

Not uncommon.

254. CHALCOPELIA AFRA (Linn.). Emerald-spotted Dove.
Fairly common.

255. HAPLOPELIA LARVATA (Temm. & Knip). Lemon Dove.

Scarce, but breeding. We procured a pair on January 7th, 1907.

256. FRANCOLINUS AFRICANUS, Steph. Grey-wing Francolin.
Not uncommon.

257. FRANCOLINUS LEVAILLANTI (Valenc.). Cape Red-wing.

Common.

258. PTERNISTES NUDICOLLIS (Bodd.). Red-necked Francolin.

Not uncommon in the thick bush.

259. COTURNIX AFRICANA, Temm. & Schleg. Cape Quail.

Common. Their eggs vary considerably, being of a buffish tint to yellowish-brown ground-colour, sometimes finely spotted, sometimes heavily blotched, and sometimes both. An egg taken in November 1906 has no markings whatever.

260. *COTURNIX DELAGORGUEI* (Delag.). Harlequin Quail.
Common at times. Specimens obtained January 1907.

261. *NUMIDA CORONATA* (Gray). Common Guinea Fowl.
Common. The young *flying* birds have no bony helmet on the top of the head, this region being covered with woolly feathers and striped like that of a young Ostrich.

262. *CREX PRATENSIS*, Bechst. European Corn Crake.
Scarce.

263. *ORTYGOMETRA PUSILLA* (Pall.). Baillon's Crake.
Scarce.

264. *SAROTHRURA LINEATA* (Swains.). Jardine's Crake.
Scarce. ♀, Fish River Randt near Grahamstown, 1891.

265. *GALLINULA CHLOROPUS* (Linn.). Moorhen.
Not uncommon in some localities.

266. *PORPHYRIO PORPHYRIO* (Linn.). King Reed-Hen.
Rare.

267. *FULICA CRISTATA*, Gmel. Red-knobbed Coot.
Not uncommon.

268. *PODICA PETERSI*, Hartl. Peters's Finfoot.
Rare.

269. **TETRAPTERYX PARADISEA* (Licht.). Stanley Crane.
Fairly common.

270. *OTIS AFRA*, Gmel. Black Knorhaan.
Fairly common.

271. *OTIS VIGORSI*, Smith. Pink-breasted Knorhaan.
Scarce. February 1894.

272. **OTIS CAFRA*, Licht. Stanley Paauw.
Scarce.

273. **OTIS BARROWI*, J. E. Gray. Barrow's Knorhaan.
Rare.

274. *ÆDICNEMUS CAPENSIS*, Licht. Dikkop.
Common.
275. *CURSORIUS RUFUS*, Gould. Rufous Courser.
Common.
276. *CURSORIUS TEMMINCKI*, Swains. Temminck's Courser.
Scarce.
277. *RHINOPTILUS AFRICANUS* (Temm.). Two-banded
Courser.
Not uncommon.
278. **GLAREOLA MELANOPTERA*, Nordm. Nordmann's
Pratincole.
Common occasionally.
279. *HOPLOPTERUS ARMATUS* (Burchell). Blacksmith
Plover.
Rare. ♀, June 1896.
280. *STEPHANIBYX CORONATUS* (Bodd.). Crowned Lap-
wing.
Common in Upper Albany. Their eggs vary a little in
size, and are sometimes only thickly speckled with very few
blotches, although the heavily blotched specimens predominate.
281. *STEPHANIBYX MELANOPTERUS* (Cretzsch.). Black-
winged Plover.
Scarce.
282. *ÆGIALITIS ASIATICA* (Pall.). Caspian Plover.
Not uncommon.
283. *ÆGIALITIS TRICOLLARIS* (Vieill.). Three-banded
Plover.
Common.
284. **PAVONCELLA PUGNAX* (Linn.). Ruff.
Scarce visitor.
285. *TRINGA MINUTA*, Leisl. Little Stint.
Not uncommon.

286. *GALLINAGO NIGRIPENNIS*, Bp. Ethiopian Snipe.
Very rare.

287. *ROSTRATULA CAPENSIS* (Linn.). Painted Snipe.
Scarce. *a.* ♀, January 1889.

288. *STERNA BERGII*, Licht. Swift Tern.
Occasionally met with. A specimen in the Museum is dated August 1902.

289. *PRION DESOLATUS* (Gmel.). Narrow-billed Blue Petrel.
One specimen obtained.

290. **PODICIPES CRISTATUS* (Linn.). Crested Grebe.
Scarce.

291. **PODICIPES CAPENSIS*, Licht. Cape Dabchick.
Not uncommon. An egg taken on November 9, 1895, on Table Farm near Grahamstown, was of a dirty cream colour, and of a pyriform-ovate shape—measuring 35.5 × 27 mm.

EXPLANATION OF PLATE III.

- Fig. 1. *Fringillaria tahapisi*. ✓
 2. *Emarginata sinuata*. ✓
 3. *Emberiza flaviventris*. ✓
 4. *Pachyprora pririt*. ✓
 5. *Chlorodyta neglecta*. ✓
 6. *Campophaga hartlaubi*. ✓
 7. *Cossypha bicolor*. ✓
 8. *Irisor viridis*. ✓
 9. *Campophaga nigra*. ✓
 10. *Laniarius rubiginosus*. ✓
 11. *Telephonus senegalus*. ✓
 12. „ *tchagra*. ✓
 13. *Lamprocolius melanogaster*. ✓
 14. *Chrysococcyx klaasi*. ✓
 15-17. „ *eupreus*. ✓
 18. *Indicator sparrmani*. ✓

NOTE.—The top row of eggs on PLATE IV. are two *Hirundo albigularis* with one unidentified *Indicator*.

IX.—Occasional Notes.

(1) Mr. W. L. SCLATER, our late President, whose resignation from the Directorship of the South African Museum, Cape Town, we announced in our last issue, has taken an appointment as Director of the Colorado College Museum, Colorado, U.S.A.

The good wishes of the Union for a congenial and prosperous sphere of work follow him.

(2) Mr. S. A. NEAVE, M.A., B.Sc.(Oxon.), who was attached as Naturalist to the Geodetic Survey in N.E. Rhodesia, spent in that part of Africa nearly two years from March 1904 to January 1906. His collection of birds numbers some 750 specimens, which, when worked out, are expected to display some highly interesting results.

(3) Capt. BOYD ALEXANDER's Trans-African Expedition had reached Bomakandi, a Belgian station on the Wellé River, in April 1906: on the 16th June it was at Niangara. Capt. Alexander intended to proceed *viâ* Dongu to Wadelai on the Nile.

It will be remembered that early on this Expedition Capt. Alexander lost his brother, and it is sad to record that the remaining member of the Expedition, Capt. Gosling, has now also died, from blackwater fever. Nothing, however, daunts the courage of Capt. Alexander, who pushes on regardless of these misfortunes and who appears to be fever-proof.

(4) THE attached note from the London 'Times' of Aug. 17th, 1906, may be interesting to readers:—

“THE ZOOLOGICAL GARDENS.—The most important recent additions to the Zoological Gardens consist of a large collection of South African birds, formed by Capt. B. R. Horsbrugh, A.S.C., who has been serving in the Orange

River Colony, where he devoted his leisure to the practice of aviculture. On his recent return to England he brought with him about 100 birds, all rare, and some imported for the first time. Of these a few passed into the hands of other aviculturists, who were glad to secure such prizes; the rest, representing 21 species, in 19 genera, he presented to the Zoological Society. The Waxbills, Finches, Buntings, and Weaver Birds, which form the bulk of the collection, will appeal strongly to all interested in aviculture, as several have not been exhibited before. There are the Black-faced Waxbill (*Estrilda erythronota*), of which Capt. Horsbrugh sent home a skin last year; the Ruddy Waxbill (*Lagonosticta brunneiceps*), the Queen Widah Bird (*Vidua regia*), the Taha Weaver (*Pyromelana taha*), the Cape Robin (*Cossypha caffra*), the Pale White-eye (*Zosterops pallida*), and the Golden-crested Bunting (*Emberiza flaviventris*). In the collection are also three Pied Barbets (*Tricholama leucomelas*), with black and yellow plumage, crimson forehead, and the feathers of the breast hairy, whence comes the generic name; a Baebakiri Shrike (*Laniarius gutturalis*), a bush-haunting bird of green plumage, recognized principally in its native haunts by its loud call, for it is seldom seen, owing to its protective plumage; a Tit-Babbler (*Parisoma subcaruleum*), a little ash-coloured bird with a long fantail edged with white; a Double-banded Courser (*Rhinoptilus bicinctus*), differing from the northern species in being brown, with dark markings above, and having two black bands on the chest; and a Lesser Red-shouldered Glossy Starling (*Lamprocolius phænicopterus*), with bluish-green metallic plumage and a red shoulder-spot. Two Red-cheeked Mouse-Birds (*Colius erythromelon*) and four Guinea-Fowls—two examples of two species (*Guttera edouardi* and *Numida coronata*)—are welcome additions, as few individuals have previously been exhibited.”

Capt. Horsbrugh is now stationed at Potchefstroom, Transvaal.

(5) THE expedition planned by Dr. Turner during the winter months of last year was a great success. A short

account of the more conspicuous birds observed will be found in this Number. The following general account is extracted from the 'Transvaal Leader' of Sept. 20th, 1906.

“ A SHOOTING TRIP IN GAZALAND.—UP THE INCOMATI.

“ PRETORIA, Wednesday.

“ Of the many trips and shooting expeditions recorded from time to time in the public Press, that recently taken by Dr. George Turner, M.L.C. (Medical Officer of Health for the Transvaal), into Gazaland is of peculiar interest, by reason not only of its novelty, but also from the fact that in making the journey he passed through a populous native country, and toured one of the principal and most interesting waterways of Portuguese East Africa, in the River Incomati.

“ In arranging his trip, Dr. Turner received the information that at the dry season of the year there was usually some two or three feet of water in the shallower reaches of the river. He had his boats specially built in Pretoria, and, as they were only to draw 11 inches of water, he rested content that he was well on the right side. When, however, he arrived at Kilometre 53, below Ressano Garcia, on the Delagoa line, and within easy distance of his jumping-off place, he found to his dismay only 4 inches of water in some parts of the river. Whilst the necessary pitching of the boat-seams had been gone through, the party spent the time in shooting the Guinea-Fowl and buck, and eventually made a start on the 10th June. The difficulties of poling the boats were many owing to the low water, but Sabi Fort was reached on the 17th June, some small game being bagged on the way. Leaving that place after a two days' delay, owing to a hitch with regard to the shooting licence, the party proceeded. In this section of the river several crocodiles were shot and some koodoo sighted. The scenery was magnificent, and the river-water clear and delicious to drink. The banks of the river were densely populated by what the Doctor terms 'an infernally lazy native population.'

“BIG GAME.

“From Magude, where the travellers were hospitably entertained by Commandant Pimental, arrangements were made for a trek across country for shooting. Two days' trekking brought the party to a large vlei and native kraal, but, owing to the presence of the natives, game was scarce. Trekking on, the M'Karu Forest was reached, and here game was found in abundance. At one spot close upon 200 impala and wildbeeste were counted, and, in spite of high grass and the difficulty of getting at them, 20 impala and four wildbeeste were bagged. Here also three giraffe were located, but, despite a day was spent in the chase, nothing came of it ; and although Mr. Hauptfleish saw zebra, they also were too smart for the sportsmen. No lions were seen, but wolves and wild dogs were numerous, and constantly made things lively at night.

“After two days at the forest, the party retired to the river by way of the Manzi 'Mhlope native labour compound, which Dr. Turner visited. It was then arranged that they should proceed down the Incomati as far as the Kolwen River, cross the Tswali Lake, make a detour, and come back by way of the compound again. Taking to the boats, therefore, they reached the Kolwen in four days, and found it so narrow that they had the greatest difficulty in getting the boats through. Camping for the night on the reedy banks of the river, the sportsmen had their reward at sunset. Wild-fowl were plentiful, and, as the Doctor put it, one could sit at the evening meal with a gun on one's knees and shoot Duck as they flew above the table. On reaching the Tswali Lake, it was found of large extent, the trees on the distant shore being only just discernible. Here another difficulty cropped up. The wind was blowing briskly, and it was discovered that the boat-boys could not row. After an unsuccessful attempt to reach them, Dr. Turner crossed the country on foot to the Manzi 'Mhlope compound, whence boys were sent to take the boats back to the river.

“*OSTRICHES.*”

“From this point, under the guidance of Mr. Brukhuisen, the party went a two days’ journey into Gazaland. On the second day out an extensive plain, studded with clumps of bush, tall trees, and with a dense underwood, was reached. Ostriches were seen on the plain and wildebeeste and sable antelope also, but the dense nature of the bush made shooting difficult. They, however, bagged one fine antelope, the skin and horns of which they preserved for setting up, and saw and visited an Ostrich nest which contained 21 eggs, of which Dr. Turner took two as specimens. On their return to ’Mhlope the party passed through a country where they sighted sasebi, but unfortunately did not get within shooting distance. Here also Paauws were very plentiful, and several were bagged. Ducks and Geese were innumerable, but very wild. In the river crocodiles could be seen three and four at a time, and some fine barbel were caught when the party got back to the Tswali Lake. Returning to the Kolwen, a man met them, who volunteered, for a consideration, to take them to a place where hippos were to be found. The offer was accepted, and they started on a toilsome journey in a dug-out canoe, and then by land to a small vlei, where, whilst hippo spoor and dung were plentiful, none of the animals were to be seen. It was then sunset, and, as the guide refused to go any further, his consideration at the end of the journey only amounted to one shilling, which he accepted with bad grace.

“The Kolwen was safely negotiated the next day, and the boats once more started down the Incomati. The character of the country had changed, and instead of high well-grown trees right down to the banks of the river, with clear shallow water and a yellow sand, they now passed through enormous marshes covered with high cane reeds, the water being deep and no longer clear. On the second day down they heard that

BUFFALO

were to be found in the neighbourhood, and they obtained

guides from a native chief and set out, although they were warned as to the danger of their expedition. The ensuing tramp proved to be one of the wettest and hardest they had ever done, or ever wished to do. They were soon in water and mud up to their knees, and the Doctor at one spot got so fixed in the mud that it took the united efforts of two men to extract him. When they were not wading through canebrakes, they were following buffalo paths in reeds higher than their heads. They were lured on by fresh spoor and dung, and also by the fact that the guides were evidently very much afraid and could not be got away from the guns. After five hours' tramping they camped on high ground, all being in a soaked condition. They were all immediately covered with mosquitoes, which drew blood, but in spite of the tormentors they camped on the spot for the night in the lee of a smoky fire. In the words of the Doctor, 'It was evident that buffalo were in the neighbourhood, probably in large numbers. It was possible that we might stumble across one at any moment; it was also just as possible, owing to the density of the reeds, that we might spend a fortnight there without meeting a single bull.' They therefore determined to go back, and reached the boats an hour after sundown the next day. Resuming their journey, during the next few days they got plenty of Duck and Dikkop, and all sorts of Heron and wild Waterfowl abounded.

"On the 25th August the party reached Manhica, where Dr. Turner had been in 1899, and the Portuguese Commandant welcomed the party and invited them to his table. For the next few days they were entertained most hospitably. Here the party disposed of their boats to a trader, and then started down the river in a schooner for Marcauenne. On the way down they bagged a lot of Duck, and also saw five hippo in the river, but refrained from shooting as time was running short, and there would have been too much delay in waiting for the carcass to rise and in drying the skin, even if they had bagged one of the animals. At Marcauenne an amusing incident occurred. When they arrived in the evening Dr. Turner wanted to send in his card to the Commandant

of the district. The officers on duty, however, refused to have anything to do with it, and, as the Doctor put it, he did not blame them. 'I was,' he said, 'a distinctly disreputable-looking individual, with long hair, a big bushy white beard, and terribly stained and dilapidated clothes.' So they went on in the boat, and after a somewhat stormy passage landed at Allen & Mack's Wharf, Delagoa Bay, whence, after being photographed and taking a day's rest, they came home to Pretoria after an absence of three months.

" 'The trip,' said Dr. Turner, 'has done me an enormous amount of good, and I can strongly recommend it to elderly gentlemen suffering from obesity. They may depend upon it that when they have gone through the course they will have, as I have had, to reclothe themselves.' "

(6) Mr. C. HARVEY, of the Trout Hatchery, Potchefstroom, Transvaal, writes :—

" In March 1906 a Tick Bird (*Buphaga africana*) was seen doing an ordinary Yellow Masked Weaver (*Hyphantornis velatus mariquensis*) to death in a most excitable manner. Tick Birds have been exceedingly numerous this year in the Potchefstroom District ; I have seen as many as twenty-five in the Market Square at one time.

" During the last two months I have shot about twenty Kingfishers of three different species in my pond enclosure on the Mooi River.

" Not so long ago I saw one of the Giant Kingfishers (*Ceryle maxima*)—Groot Ijsvogel—making off with a 6-inch trout. In his fright he dropped the fish, which I secured and returned to its pond alive and well after despatching the bird with a charge of No. 6."

[*Note.*—When at the Potchefstroom Hatchery, in November last, Mr. Harvey showed us some of the Kingfishers he had shot, which were *Ceryle rudis* (Pied Kingfisher) and *Corythornis cyanostigma* (Malachite Kingfisher).—EDD.]

(7) THE following extract from 'Nature,' dated July 26th, 1906, may be of interest :—

"A beautiful coloured plate (by Mr. H. Grönvold) of hitherto undescribed or unfigured eggs of South African perching-birds forms an attractive feature in the first number of volume ii. of the 'Journal of the South African Ornithologists' Union.' The accompanying notes are by Messrs. J. A. Bucknill and G. H. Grönvold. In a paper on Bird-migration in South Africa (originally read at last year's British Association Meeting), Mr. W. L. Selater directs attention to the occasional breeding of the Bee-eater during its (Northern) winter sojourn at the Cape. The evidence is indisputable ; but the question as to whether the same individual birds breed in May in the Northern, and again in October in the Southern, hemisphere, has yet to be definitely answered. Possibly there are two phases of the bird—the one a Northern and the other a Southern breeder. Those interested in Parasitism among birds should read an article by Messrs. Haagner and Ivy on the breeding-habits of certain South African Cuckoos of the genus *Chrysococcyx*."

(8) Major R. SPARROW writes :—

"GROUND-SCRAPER THRUSH (*Turdus litsipsirupa*).

"In my former notes (vol. i. p. 13) I should have described the eggs as : 'Ground-colour pale blue spotted and blotched all over with reddish brown and with faint purple spots deeply inset in the shell.' The paragraph at present reads rather as if the eggs were unspotted. They resemble the pale variety of the eggs of the English Missel Thrush."

(9) THE annexed cutting from the London 'Times' will be of interest to South African ornithologists :—

"BREEDING OF BLACK-FOOTED PENGUINS.—This South African species (*Spheniscus demersus*) has for many years been represented in the Zoological Gardens ; but no attempt was made to nest till the stock, then largely increased, was transferred to the sea-lions' pond. About six weeks ago

two of the birds paired, and made a rude nest on a kind of terrace in the rockwork. The material consisted for the most part of dry sticks and twigs, and mixed with these were fish-bones and pieces of fish dried by exposure. Two eggs were laid, the second three days after the first; the male bird took his full share of the duties of incubation, and the young were hatched out exactly five weeks after the deposition of the second egg. The chicks are clothed in dusky down, and are closely covered by the hen bird. According to the general belief, the parents feed the young for a considerable time, inserting their bill in that of the nestling. It will be interesting to have this point established, or disproved, by the observation of the keepers. The converse method is adopted by the Common Cormorant; the half-digested fish is regurgitated, and the young bird inserts its bill in that of the parent. Two other Penguins in the same enclosure have paired, and selected a site quite different in character from that selected by the first pair—namely, between two pieces of rockwork, and sheltered by a third. From the observations of naturalists it would seem that in a rookery these birds avail themselves of shelter, when it can be found, nesting under overhanging stones or burrowing, according to the character of the ground, and only building in the open from necessity. Black-footed Penguins have nested in the Jardin d'Acclimatation in the Bois de Boulogne, where they were kept in a large enclosure. Small dog-kennels were utilized as nesting-boxes, and young birds have been hatched and reared."

(10) AN appreciative notice of No. 1, Vol. II. of this Journal appears in the October 1906 number of 'The Ibis.'

(11) CLOSE SEASON FOR WATERFOWL.—There has been lately considerable agitation amongst sportsmen in the Transvaal towards the grant of permission to shoot Wild Geese and Duck outside the present open season. At present all Geese and Ducks are included in the Game schedule, and

can only be shot between the 14th April and 31st August. It is popularly considered that those species of Geese and Duck which are usually found in this Colony do not breed in the close season but nest in the shooting-time, and it is thought that if this is so the close season for these fowl should be altered. A good many people seem to advocate the total removal of waterfowl from the protected list. The Transvaal Game Protection Association has the matter in hand, and is anxious to receive any data of the nesting of Geese or Duck in the Colony, in order to be able to form a proper opinion on the matter and to advise the Government accordingly. A considerable number of letters have been received and have appeared in the public Press, from which the most important are here reproduced :—

“ DUCK SHOOTING.

“ *To the Editor of the Leader.*

“ SIR,—Now that the above season has closed until next year, I should like to say a few words *re* Duck shooting in the Transvaal. The present season lies between April and September—practically the dry season, and when most of the birds are away. All the small pans and swamps in the district during this time of the year are dried up, and the few Ducks that do remain here are only to be found on the large mining dams. These birds are carefully protected and guarded by the mining officials, and the dams are posted with notices—as ‘Shooting strictly prohibited,’ and such like. Consequently there is little or no chance of an outside sportsman having a day’s sport. Whilst out walking on Sunday morning I passed several small pans and swamps, and was surprised to see the number of Ducks about. I counted fully forty of the birds flying around the pan; and no matter where a person goes here in the rainy season, he will find birds on every available sheet of water. Might I suggest that a more suitable season be arranged for Duck shooting—say, the wet months of the year? If such was the case, all classes of men who are fond of sport would be able to spend many pleasant hours shooting. I was surprised

to hear that Ducks were protected in the Transvaal, as they are so numerous here. In the Australian Colonies, I believe, Duck shooting is carried on during the whole year, and, as they breed very quickly, little harm is done. Why not remove Ducks from the protected list?—I am, etc.,

“SPORT.”

“WILD DUCK SHOOTING.

“*To the Editor of the Leader.*

“SIR,—I see in this morning’s ‘Leader’ a letter by ‘Sport’ *re* Wild Duck shooting: allow me, through your columns, to add a few remarks. In my opinion there should be no close time for Wild Duck, as about here in the open season you hardly see any, only in such places as ‘Sport’ mentions. Only once during last shooting season did I see any Duck in this district—I think it was in June,—when I came across about six old ones and about sixteen small; some of them could not even fly: I could have secured the lot. Can you, Sir, or any member of the Transvaal Game Society inform me in what month Wild Duck breed? I have been here twelve years, and have seen young Duck in nearly every month of the year.—I am, etc.,

“SPRINGS,

“HARRY H. SMITH.”

“28th September, 1906.”

“WILD DUCK SHOOTING.—*THE CLOSE SEASON.*

“*To the Editor of the Leader.*

“SIR,—I was much interested to observe the letters of ‘Sport’ and Mr. Harry H. Smith which recently appeared in your columns upon this question. It may not perhaps be uninteresting to state that the propriety of the present close season for Duck shooting is and has been for some time past engaging the close attention of the Transvaal Game Protection Association, which has been endeavouring to collect reliable data as to the breeding-seasons and places of the different members of the Duck family which frequent the Transvaal. As far as I am aware, the present position taken

up by the Transvaal Game Protection Association as a result of a meeting held in April of this year is that, until some more positive information had been obtained as to the times of the breeding of Duck in the Colony, it was inadvisable that they should be removed from inclusion in the Game-list. I believe I am correct in stating that, as a result of an enquiry made by the Central Committee of the Transvaal Game Protection Association from its branches, six were in favour of the removal of Ducks from the list of Game, whilst five were against that view. No doubt, before the commencement of the next shooting season, the Association will be in the possession of a certain number of reliable observations which may enable it to advise the Government with certainty as to what should be the proper, if any, close season for these birds; but at the present time it is undoubtedly the fact that the information which is at the disposal of those who are anxious to put this matter right (if it is wrong) is extremely meagre, and it is yet almost impossible to draw any general conclusions, owing to the lack of specific instances with accurate data upon which the breeding of Ducks or Geese has been recorded from the Colony.

“I have been tempted, therefore, to venture into your columns with a few remarks upon this subject, with the hope that the publicity which the matter may obtain by means of this letter may possibly result in eliciting numbers of specific instances in which the breeding of the different species of Ducks have been here observed; thus enabling the Association to draw some conclusions as to what line of action it is proper to take in the matter. In order to form a groundwork upon which observations might be made, it will perhaps be useful to append immediately below a list of those members of the Duck family which have hitherto been recorded from the Transvaal, as set out in the latest available publication, viz. Vol. iv. of Stark and Selater's ‘Fauna of South Africa’ (Birds), which work was only issued from the press in the current year. With this list I give all the places in the Transvaal from which the

species are recorded by Selater as having been found. This list must not, of course, be regarded as in the slightest degree or in any way exhaustive, but is in practically every case only typical of the South African localities in which the bird referred to has occurred, and only refers to actual records, either published or personally handed to Mr. Selater. Secondly, I give details of all the South African breeding-places of the different species as recorded by Selater; this list of breeding-places, unlike the list of recorded localities, probably is, so far as Mr. Selater's information when he wrote his manuscript some three years ago is concerned, doubtless exhaustive of all the knowledge he had then been able to obtain on the subject. It will be observed that these details and observations are extremely scanty.

“ Below this list I append a few cases which have come under my personal notice, with which I can supplement Selater's list.

“ LIST of Geese and Duck which are known to occur in the Transvaal, with account of known South African breeding-dates and localities.

“ 1. *Plectropterus gambensis* (Spur-winged Goose, Wilde Maccauw, or Maceoa).—Recorded on the Vaal River, near Heidelberg (Gilfillan). Breeding-places: (a) Caledon River, Maseru, Basutoland, no date (Bowker); (b) Upper Zambesi, no date (Livingstone).

“ 2. *Sarcidiornis melanonota* (Knob-billed Duck, Knobbel-eend).—Recorded from Potchefstroom (Barratt and Ayres) and Rustenburg (Ayres). Breeding-places: (a) Bechuanaland, no date (Andersson); (b) Ovampoland, February (Andersson).

“ 3. *Nettopus auritus* (Dwarf Goose, Dwerg Gans).—Recorded from Potchefstroom in April and June (Ayres). Breeding-places not known in South Africa.

“ 4. *Dendrocyena viduata* (White-faced Duck).—Recorded from Potchefstroom in November (Ayres and Barratt). Breeding unknown in South Africa, but nests in Madagascar.

“5. *Alopochen aegyptiacus* (Egyptian Goose, Berg Gans).—Recorded from the Limpopo (Buckley and Eriksson). Breeding-places : (a) Limpopo, 17th September (Eriksson) ; (b) Orange River, near Upington, 28th October (Bradshaw).

“6. *Casarca cana* (South African Shelduck, Bergeend).—Recorded from Potchefstroom in July (Ayres). Breeding-places : (a) Deerfontein, Cape Colony, no date (Grant and Seimund) ; (b) Aliwal North, no date (Whitehead).

“7. *Anas undulata* (Yellow-bill or Geelbec).—Recorded from Pretoria in June (Oates), Potchefstroom in July and August (Ayres). Breeding-places : (a) Vogelvlei in Paarl and Loetendal's Vlei in Bredasdorp, Cape Colony, no date (Layard and South African Museum, Capetown) ; (b) Vlakfontein, in Harrismith district, O.R.C., April (Sparrow).

“8. *Anas sparsa* (Black Duck, River Duck, Zwaarteend).—Recorded from near Pretoria (Buckley), Potchefstroom in March and April, Lydenburg (Ayres). Breeding-places : (a) Masern, Basutoland, November (Bowker) ; (b) Buffalo River, Kingwilliamstown, February (Pym).

“9. *Nettion capense* (Cape Widgeon, Teal-eendje).—Recorded from the Transvaal in August (Ayres). Breeding-places : Vogelvlei, in the Paarl, Cape Colony, no date (Layard).

“10. *Nettion punctatum* (Hottentot Teal). Recorded from Potchefstroom in November (Ayres). Breeding-places : (a) Ovampoland, no date (Andersson).

“11. *Pacilonetta erythrorhyncha* (Red-bill, Smee-eendje).—Recorded from the Limpopo (Holub), Potchefstroom in June and March (Ayres), Boksburg and Krugersdorp (Gilfillan). Breeding-places : (a) Ovampoland, February and March (Andersson) ; (b) Maritzburg, February and March (Fitzsimmons) ; (c) Sclater states, ‘It probably breeds throughout the country.’

“12. *Spatula capensis* (Cape Shoveller, Slop).—Recorded from the Transvaal (Ayres). Breeding-places : Berg River, no date (Layard).

“13. *Nyroca erythrophthalma* (South African Pochard).—

Recorded from Marico (Barratt) and near Potchefstroom (Ayres). Breeding-places : (a) Berg River, September (Layard) ; (b) Loetendal's Vlei, Bredasdorp, November (Layard) ; (c) Newcastle, Natal, September to October (Butler) ; (d) Odongo, Ovampoland, February (Andersson).

" 14. *Thalassornis leuconota* (White-backed Duck, Wit-rugeend).—Recorded from Potchefstroom (Ayres), Pienaar's River, near Pretoria (Penther), and Modderfontein, near Johannesburg (Haagner). Breeding-places : (a) Clairmont, near Durban, November to February (Millar) ; (b) ? Newcastle district, Natal, September to October (Butler and Fielden) ; (c) Modderfontein, near Johannesburg, April (Haagner).

" 15. *Eristamata maccoa* (Maccoa Duck).—Recorded from the Vaal River at Potchefstroom (Ayres). Breeding-places : It is thought that Butler and Fielden's eggs from Newcastle, described under (b) of No. 14, were of this species.

" 16. *Plectropterus niger* (Black Spur-winged Goose).—Recorded from Potchefstroom, the specimen being in the British Museum. This bird is of doubtful specific identity, being probably a variation of No. 1.

" To the above list I can add the few following notes :—

" No. 8. *Anas sparsa* (Black Duck).—Nest and eleven eggs photographed in July 1905 at Irene, near Pretoria, by Mr. L. E. Taylor, F.Z.S.

" No. 6. *Casarca cana* (South African Shelduck).—October 5th, 1906. I found three young birds in down, about a fortnight or three weeks old, Kruger's Drift, Modder River, O.R.C. One of these is in the Pretoria Zoo.

" Most of the species of Geese and Ducks which occur in South Africa have a very wide range, and most are probably migratory in more or less degree. Probably comparatively few of the species, and comparatively few individuals of those species which visit the Transvaal, will be found to make a practice of nesting in the Colony ; while probably, again, those few species which do nest regularly in the Transvaal will be found to vary considerably both as species

and individually in different localities in regard to the period at which they breed. Of the commoner Transvaal species, I think it is not unlikely that No. 5—the Berg Gans or Egyptian Goose—will be found nesting, as a rule, in September, October, and November in the Transvaal, and probably not at all in the present shooting season. In the Pretoria Zoo this species is now nesting in captivity.

“No. 6, the Bergeend, or South African Sheldrake—a close ally of the Berg Gans—will, I think, be found in the Transvaal nesting much about the same time as the Egyptian Goose, the preceding species.

“No. 7, the Geelbee, there should be no difficulty in finding out about. I expect it will be found, together with No. 8 (the Black Duck), to breed in the Transvaal mainly in April, May, June, and July.

“No. 11 (the Red-bill), No. 13 (the Pochard), and No. 14 (the White-backed Duck), all probably in their breeding-habits in the Transvaal follow Nos. 7 and 8.

“A great deal of the above suggestion is naturally a matter of conjecture, and not, it should be at once stated, founded on precise information. I have ventured, however, to jot down the few notes which I give above, in the hope that they may perhaps lead in some small way to a settlement of this somewhat vexed question.

“Apologizing for intruding upon your space at such length,

“I am, etc.,

“JOHN A. BUCKNILL,

“*F.Z.S., M.B.O.U., President of the South African
Ornithologists' Union.*”

“PRETORIA,

“October 13th, 1906.”

“WILD DUCK SHOOTING.

“*To the Editor of the Leader.*

“SIR,—Many people must have enjoyed the very interesting letter on the above subject appearing in your issue of the 15th inst. from the pen of Mr. J. A. Bucknill. In the belief that any observations of a lover of wild-fowl may possibly be useful to that body of sportsmen who frame our

game laws, I beg to record my own experience in noting the irregular breeding habits of the Common Brown-backed Goose, the Brown-backed Duck, and a species of Teal which bears a strong resemblance in colouring to the above-mentioned birds. I find entries in my diary during the months of July and early August 1902, of having met with broods of squeakers of all the above three kinds in the several pans in the Phillipstown-Petrusville district, Cape Colony.

“One can hardly assume that during the months mentioned these various birds reared broods out of the ordinary closed season by accident, and I ventured to infer from these instances that wild-fowl in particular have no specified period for nesting in this country.

“One naturally refrained from shooting them under the conditions, and it would appear extremely difficult for the game associations of South Africa to fix a closed season for wild-fowl while at the same time exercising that protection so necessary for the preservation of the most beautiful of our sporting birds.—I am, etc.,

“BRITISHER.”

“WILD DUCK SHOOTING.

“*To the Editor of the Leader.*

“SIR,—With great interest I have of late read the different letters *re* the closing season for shooting Wild Ducks, and perhaps my experiences may be of slight interest. For twelve years I have lived at Booyens, and only found that Wild Duck and Geese make their appearance during the rainy season. Now, during the whole of last shooting season I did not see a single Duck or Goose on the Crown Reef or any other dams running towards Langlaagte; but since the rain set in you can see hundreds of Ducks flocking down after sundown into the shallow part of the Crown Reef dam, feeding there during the night, and are off at dawn, after the first blasting operations commence, to a quieter spot at Heronmere.

“I have shot a great number of Ducks from October till

February whilst there was no close season for Ducks, and never found an egg inside of one, neither have I found a single nest at Heronmere or any of the dams mentioned. Some years ago, I was the guest of the late Mr. Tobias Mostert during the Easter holidays, on his farm, Rock Nagaar, about thirty miles from Vryburg (Bechuanaland), and we used to row out early in the mornings on one of the beautiful lakes on his estate in search of Coot eggs for our breakfast. The lakes are surrounded by large trees and bordered with thick reeds and high grass. Here I found numerous Duck nests, with eggs and young ones, and hundreds of young Ducks on the lake, from a week to a fortnight old. Nests of Ducks with eggs I found during May and April on the swampy banks of the Macabusi River, near Salisbury, and often sent my Kafir boys out to collect some eggs, which in 1890 and 1891 were a highly appreciated dish after one's ordinary fare of bully beef. Now, one of the reasons of the Game Protection Association for including Ducks and Geese in the Game Law is that a person going out Duck-shooting might feel tempted to shoot a Koorkhan or any other game coming in his way. No real sportsman, I think, would commit himself so far. Snipe, which are at present plentiful on the waters mentioned, are, however, not included in the Game Law. Your purpose is Snipe shooting; but what temptation if you are on the banks of these dams and a flock of Ducks or Geese fly round your head, and very few sportsmen think it right that these birds should be protected.—I am, etc.,

HERM FLUGGE.

“ P.O. Box 4397, Johannesburg,

“ October 16th, 1906.

“ *To the President, South African Ornithologists' Union.*

“ DEAR SIR,—Seeing your letter in this morning's paper I think the following facts may interest you :—

“ Between October 6 and 16, on the Klip River dam at Henley, I observed young broods of 6 to 9 or 10 weeks' old of Coot, Duck, and Dabchick (Moorhen).

“I observed them also at about the same date last year, None of these could yet fly, and as I was down a month earlier and failed to see any, they must have been still very young and keeping hidden among the reeds on the shore.

“I would like to add that both in October and November of last year I was able to watch the trout laying eggs—so that on the Klip, at any rate, these months were also trout-breeding months.—Yours faithfully,

“M. NAPIER.”

It seems clear that the Transvaal Game Protection Association has adopted the right course in refusing to take hasty action. It is hoped that all Members of the Union will forward any records of the nesting of any species of Wild Goose or Duck of which they have made observations, as it is extremely important that sufficient data of really reliable character should be furnished to enable the matter to be settled authoritatively.

The paucity of the present records is a remarkable instance of the lack of knowledge of the habits of some of our well-known birds, and the solution of the difficulty one in which the Union ought to take a leading part and supply a clear answer.

(12) DESTRUCTIVE BIRDS.—A matter which demands very serious and careful attention of all ornithologists is the complaint, which is now being constantly received, as to the destruction of crops by various species of small birds.

We have received recently a variety of complaints.

Mr. Johnston, Chief of the Biological Division of the Orange River Colony, writes :—

“In some parts of the O. R. C. various kinds of grain, such as wheat, oats, and Kafir corn, were seriously devastated this year by birds, the chief depredators being, so far as can be ascertained, the Red Kafir Fink (*Pyromelana oryx*) and the Kafir Fink or Sakabula (*Coliopasser procne*). On the Modder River the Red-billed Weaver (*Quelea quelea*) has increased to an alarming extent, whilst in the Korannaberg

District a number of farmers have given up sowing grain-crops owing to the destructiveness of feathered thieves. It is a serious matter, and I should like to draw the attention of the Union to it in the hope of someone being able to suggest a remedy."

We addressed a letter on the matter to the Government Botanist of the Transvaal Agricultural Department, Mr. J. Burt-Davy, F.L.S., who in reply states:—

"TRANSVAAL DEPARTMENT OF AGRICULTURE,
" Pretoria, 16th August, 1906.

" Answering your enquiry I may say that at Skinner's Court Experimental Station and the Potchefstroom Experimental Farm we have had the greatest trouble in growing certain small grains for seed, particularly *Pennisetum spicatum*, *Setaria italica*, wheat, Kafir corn, and millets:—

" Several small birds seem to be responsible, and they come in flocks. So far I have found no practicable remedy for this kind of thing: we catch a few in trap cages, shoot a few, and in serious cases keep a piccaninny 'tenting,' but the two first-named do little good, and the third plan is expensive and not thoroughly efficient.

" Some are making false nests in the Casuarinas and almost stripping them of leaves.

" I might add that V. L. Robertson, of Rolfontein, Amersfoort, says that Doves make it practically impossible to grow peas there. Kafir Cranes are said to cause much loss of mealie-plants in the Standerton District, pulling them out along the rows as Rooks do wheat in England."

The gist of this correspondence appeared in the 'Transvaal Agricultural Journal' for October 1906 (*vide* pp. 263 & 264).

It is rather difficult to suggest any very practical remedy. The trouble is common enough in other countries: in England elaborate scarecrows, clacking mills driven by wind, small boys with clappers, "sparrow-clubs," and poisoned grain are all well-known methods in frequent use, although the last is in England illegal. In great fields in the East,

such as in India, where labour costs nothing, every cultivated piece of ground has its bird-watcher, who is often perched on a high platform raised above the ground ten feet or more, from which a large expanse can be observed, and from which the watchman is often able to manipulate, by means of long strings, various frightening devices in different parts of the ground. The Sparrow-club, in which a very small reward is paid for every dozen Sparrows, is a very old English institution, and used in some cases to be supported from Parish funds! One penny or twopence a dozen was usually paid, and sometimes even more: most of the birds were taken with long purse-shaped nets, which, fastened on the ends of two long poles, were carried and placed at night close to the ivy-covered walls of buildings or on haystacks, where Sparrows roost in large numbers, and then, as the frightened birds flew out, were clapped together. This kind of bird-catching is known as "Bat-fowling," and is quite a popular amusement, the professionals often taking many other species of birds besides Sparrows, for which they find a ready sale to the bird-dealers. In the neighbourhood of London and other large towns live Sparrows are always saleable at fourpence per dozen for shooting from traps, a sport much indulged in by the less aristocratic gun-clubs.

Poisoned grain will destroy thousands of birds—arsenic and strychnine are usually used,—but it is a dangerous practice, especially near homesteads, where fowls may pick up the grain, or pigs, cats, and dogs eat the poisoned birds' bodies. As, in this country, most of the small birds roost in reeds or grass, the Bat-fowling method is probably not of much use and poisoned grain a danger, as fowls and pigs are usually allowed to run about freely.

Small Kaffir boys or girls' with clappers or wooden clack-windmills on high posts (which, it may be said, are quite easily made) seem to be the only remedies which at present occur as being useful deterrents.

(13) HABITS OF *GYPs KOLBII* (COMMON VULTURE).—The economy of *Gyp̄s kolbii* (Kolbe's Vulture) seems to be

changing somewhat, and its new habit is attracting considerable alarm. Although instances are quoted by Selater of its attack on living animals, particularly lambs and kids (*vide* Fauna of S. Africa : Birds, vol. iii. p. 386), it has, as a rule, been always recognized that its food consisted chiefly of carrion. Within the last two years the practice of attacking even full-grown sheep appears to be becoming quite common in the Transvaal, and if the habit spreads it will constitute a serious menace to the farmer. The matter was mentioned by Dr. Gunning at the last Annual Meeting of the Union (p. ix, vol. ii. no. 2), and is referred to at some length by Mr. C. H. Taylor in his paper in this Number of the Journal (p. 33).

The reason why this Vulture is becoming a regular foe to live animals may be due to several causes, all of which may be partially responsible.

In the first place, the decrease of buck throughout South Africa, upon the carcasses of which it must have at one time chiefly fed ; secondly, there is little doubt, as remarked by Selater, that the rinderpest of 1895 and succeeding years drew most of these birds from the southern portion of the peninsula northwards, where the dead cattle and other animals offered a plentiful food-supply (*vide loc. cit.* iii. p. 385) ; lastly, because there is equally no doubt that the enormous number of horses, mules, and cattle which perished during the war and for some time afterwards also provided conditions peculiarly favourable for the increase of the species, particularly in the Transvaal.

During the past ten years or so it may be confidently stated that the economic position of this species has been very favourable, and it has doubtless increased numerically somewhat rapidly.

The diminution of Game, and the absence of those two huge sources of food presented by the rinderpest and the war must have made the Vulture's task of finding sufficient food a matter of difficulty, with the result indicated above, a fairly natural corollary. It may be borne in mind that a far more unusual habit has arisen with the growth of sheep-

farming in New Zealand, where a Parrot, "*Nestor notabilis* (Gould)," the "Kea" of the Colonists, has of late years been found to attack sheep by picking holes in their side, and lacerating the intestines and thus causing death, although the loss thus occasioned has not been very great, not more than one sheep in three hundred being found to be attacked (*vide* Dr. Menzies, *Trans. N. Zealand Inst.* xi. p. 397; Newton, 'Dictionary of Birds,' p. 628).

(14) THE Central Committee of the Transvaal Game Protection Association passed a resolution on the 31st of October, 1906, recommending that the Government should protect absolutely, *i. e.*, by declaring them Royal Game, all Locust Birds both large and small. This resolution would presumably include *Dilophus carunculatus* (Wattled Starling), *Ciconia alba* (White Stork), and *Glareola melanoptera* (Nordmann's Pratincole). *Tinnunculus naumanni* (Lesser Kestrel) might also well be protected for the same reason.

(15) THE quantity of Game which now finds its way into the Markets in South Africa is very considerable and is undoubtedly increasing. From figures which have been supplied from the Kimberley Market the amount of Game there sold during the last three seasons was surprisingly large. In the 1904 season 12,975 head of Game was disposed of, realizing £2752; in the 1905 season 29,119 head realized £4667, whilst in the 1906 season 40,933 head realized £4829.

Some interesting details of the different kinds of Game which are included in the 40,933 head sold in 1906 are given; these were:—

Springbuck, 4025.

Duiker, 174.

Steinbok, 1415.

Hares, 5131.

Knorhaan, 3565.

Redwing, 2957.

Guinea Fowl, 818.

Paauw, 59.

Wild Duck, 130.

Geese, 33.

Small Birds, 22,626.

The item Small Birds would probably include the Coqui Francolin, as well as the Sand-Grouse, which is, of course, extremely abundant in that neighbourhood.

(16) INTRODUCTION OF ENGLISH STARLING.—The 'Transvaal Agricultural Journal' of Oct. 1906 contains a letter (*vide* p. 263) from Messrs. Peterson and Techow, of Krugersdorp, advocating the introduction of the English Starling (*Sturnus vulgaris*) into the Transvaal, for the purpose of checking the havoc caused in vegetable gardens, and especially to turnips and cabbages, by the well-known pest the bug known as the Bagrada Bug. The writers, who say that they are Australians, state that this bird lives entirely on insects, and that they have had experience of the benefit which the introduction of the Starling has effected in Australia by the destruction of noxious caterpillars and insects.

In answer to their letter Mr. C. W. Howard, the Assistant Entomologist of the Transvaal Agricultural Department, deprecates the suggestion, pointing out that the Starling, since its introduction into New Zealand, has become a well recognized pest, and that the numbers of this Bug can be kept in check by proper attention to the culture of the plants which it attacks.

Mr. Howard also refers to the danger of the introduction of species of birds into a new country where it is impossible to foretell how they may alter their habits under new economic conditions, and refers in particular to the disastrous result of the importation of the English Sparrow into the United States of America.

Mr. Howard also states that both the English Starling and the English Sparrow have already been introduced into

South Africa, the former at Durban and the latter at Cape Town, This last statement should be reversed.

The English Starling was introduced into Cape Colony by the late Mr. Rhodes about 1898, when a few pairs were turned out at Grook Schuur at Rondebosch. It has now well established itself in Cape Town and the suburbs round Table Mountain, and has even been seen at Stellenbosch; it nests freely, and will no doubt rapidly extend its range (Annal. S. African Museum, vol. iii. part viii. p. 366).

The Common English Sparrow was recently introduced near Durban, where it was first noticed in 1902; it is rapidly increasing, and a specimen has already been shot in the neighbourhood of Pretoria (Annals S. African Museum, vol. iii. part viii. p. 37).

That the English Sparrow is a curse to agriculture there is now not the slightest doubt, and its establishment in S. Africa should be most carefully watched.

The English Starling, though primarily insectivorous, is a terrible fruit thief, and in England has, within the last fifty years, increased so enormously as to be the cause of serious trouble to both professional and private fruit growers.

This country will probably be much the better without the presence of either species.

(17) OCCURRENCE OF *AMADINA FASCIATA* IN SOUTH AFRICA. —Mr. A. Duncan (Johannesburg) writes:—"The specimen of *Amadina fasciata* (vide this Journal, vol. i. no. iv. p. xiv) exhibited by me at the Third Annual Meeting of the Union was one of a pair which I bought at Scott Wakeford's, the local bird-fancier. He informed me that they were brought with other birds from 'Plum Tree,' a station on the Rhodesian Railway north of Mafeking. The male died the following day, but the female is still alive in my aviary" (20.9.06).

This is perhaps hardly sufficient to prove this species' claim to inclusion in the S. African list, as it is conceivable that the birds may have been brought in from outside our limits. As, however, Plum Tree is in Southern Rhodesia, this does

not seem very likely. Mr. W. L. Sclater has, however, included the species in his Check-list of South African Birds, on the sound strength of a pair collected by Dr. Stoehr at Zumbo on the Zambesi. He also saw a pair in captivity in Buluwayo, which its owner stated had been caught near the town. Rhodesian ornithologists might look out for the occurrence of this species.

(18) Mr. C. B. HORSBRUGH (Pretoria) writes :—“ Perhaps the enclosed cutting from the ‘Zoologist,’ 1899, p. 80, might be interesting to S. African ornithologists. It would be desirable to know if the nest was preserved. I might add that I once found a curious nest constructed entirely of fine wires taken from the wreaths in a cemetery. The builders were a pair of Turtle Doves (*Turtur auritus*), and the nest was in the neighbourhood of Bath, England. I recorded the occurrence in the ‘Field’ some years ago.

“‘STRANGE NEST OF A SOUTH AFRICAN BUSH SHRIKE.—I found a nest of the Pied Bush Shrike (*Bradlyornis silens*) near the Fountains, Pretoria, Transvaal, on Nov. 6th, 1898. The nest was about eight feet from the ground, in the fork of the stem of a small thorn tree. It was built purely of *twine*. I examined it carefully, but could not find any other material used in its construction. The inside was lined with small white feathers. It contained three eggs of a pale green colour, splashed with red at the larger ends.—ALEX. ROSS (Johannesburg, Transvaal).’

“[Fountain Grove is a short distance from Pretoria, and is a favourite resort. There is a hostelry there, many picnics held, and many corks drawn. Hence the *twine*.—ED.]”

It may not perhaps be known to all our readers that the Editor of the ‘Zoologist’ at the date of this Note was Mr. W. L. Distant, who resided in the Transvaal for some time about 1889, and published that pleasant little book ‘A Naturalist in the Transvaal.’ Mr. Distant’s residence in Pretoria accounts for the knowledge of the convivial character of “the Fountains,” as displayed in his Editorial Note.

Bradyornis silens (Silent Bush Robin) = *Tarsiger silens*, and is not now called or placed with the Shrikes.

(19) Mr. W. KIRBY, of the Kimberley Waterworks, writes:—"The following dates for 1906 may be of interest: the first examples of the Rufous-breasted Swallow (*Hirundo semirufa*) arrived here on August 20th, the Bee-eater (*Merops apiaster*) on 22nd September, and the Swift (*Cypselus apus*) on 2nd October. On 17th September there were upwards of 500 nests of the Cliff Swallow (*Petrochelidon spilodera*) on a stone building."

(20) NEW RECORDS FROM PORT ELIZABETH.—Mr. F. W. Fitzsimons, Director of the Port Elizabeth Museum, forwards us the following notes:—

"The distribution of Meyer's Parrot (*Paeocephalus meyeri*), according to the latest authorities, does not include Cape Colony. During February last two of these birds were shot at Klip Vlei, which is in the near vicinity of Port Elizabeth. I have carefully examined these specimens, and I am quite convinced they are wild birds. They were shot in the scrubby bush and are both males. If more are discovered I shall let you know.

"Selater states that the Cape Grass Bird (*Sphenæacus africanus*) is confined to the western portion of the Cape Colony. I have carefully examined a specimen procured in the vicinity of Port Elizabeth, and it is without question one of this species. The main difference in the two species is that the upper and under tail-coverts are without streaks in *S. intermedius*, and the size differs somewhat. The specimen before me answers perfectly in the markings and measurement to *S. africanus*. Mr. J. G. Brown, who knows the birds in this locality better than any man, assures me it is quite common here. If this be so, then its range must be extended to the Eastern Division of the Colony. The specimen referred to was shot near Zwartkops, a few miles from this town."

(21) BIRD MIGRATION.—In order to endeavour to carry out immediately some part of the programme outlined at the Third Annual Meeting of the South African Ornithologists' Union an attempt is being made to start to obtain some definite idea of the migration of some of the more typically migratory South African species of birds. With this object a short circular has been drawn up, a copy of which will be found enclosed in this number of the Journal, which will be circulated throughout South Africa to all persons whom it may be thought may be able to assist in furthering the scheme. It will be observed that at the commencement the list of birds chosen is a very small one; but this course has been thought advisable in order not to deter those who may be willing to co-operate by any apparent difficulty or serious work in connection with the proposal, and at the same time an attempt has been made for the same reason to pick out species which are easily capable of being recognized, even by those who are not serious students of ornithology.

If the plan seems to promise success it is hoped that next year a more elaborate list can be circulated for a similar purpose.

It is hoped that every endeavour will be made by members of the Union to further the undertaking, and that it may lead up to a series of careful and accurate observations which may make possible a proper ornithological survey of South Africa, which will embrace the country south of the Zambesi River on the east, and the Cunene River on the west coast. At the commencement this survey would occupy itself mainly with the question of migration.

It will be remembered that a Committee of the Union has already been appointed to arrange, classify, and record systematically all observations which may be sent in, and this part of the work will be undertaken at the Transvaal Museum, Boom Street, Pretoria, under the superintendence of Dr. Gunning, F.Z.S.

The Secretary of the Union will, on application, be pleased to supply any number of the forms which are now prepared to any persons desirous of lending their assistance.

It may be mentioned that the results which have been

obtained by similar methods in other countries have been extraordinarily interesting and most beneficial both to agriculture and to students of ornithology in general.

(22) WE greatly regret to have to announce the departure from South Africa of our much-valued President, Mr. John A. Bucknill, M.A., who, with the introduction of Responsible Government into the Transvaal, has resigned his office and taken up an appointment in Cyprus. Mr. Bucknill has been the chief Editor of this Journal since its inception, and his loss will be greatly felt. South African ornithologists will wish him all prosperity in his new sphere of work.

X.—*Short Notices of Ornithological Publications.*

1. *The Ibis: Journal of the B.O.U.*, July and October, 1906.

The July (1906) number of 'The Ibis' contains the following papers :—

1. "On a new Owl from Java." By Dr. O. Finsch.

The species is called *Syrnium bartelsi* and is named after its discoverer, Mr. Max Bartels, a prominent student of Javan ornithology. Owls are rare in Java, only ten species being known.

2. "On the Birds collected in Transcaucasia by Mr. A. M. Kobylin." By S. A. Buturlin.

This paper gives a list, with some interesting notes of some 136 species of birds obtained by Mr. Kobylin during a three years' residence in this district.

3. "Field-Notes on the Birds of Chinkiang, Lower Yangtse Basin.—Part I." By J. D. D. La Touche, C.M.Z.S., M.B.O.U.

These are instructive notes compiled during a five years' residence in this city. The writer pays a good deal of attention to the eggs of many species and describes those of some rare birds with close precision.

4. "Notes on the Parrots. (Part V.) By T. Salvadori, H.M.B.O.U.

The author continues his check-list of the Parrots.

5. "On the Birds collected by Mr. Walter Goodfellow on the Volcano of Apo and in its Vicinity, in South-east Mindanao, Philippine Islands." By W. R. Ogilvie-Grant.

This is an account of an important collection, recently acquired by the British Museum, made during the early part of 1905. This part of these islands had been occasionally visited before by collectors, but not by any means thoroughly worked. Seven species new to science were obtained.

6. "On a Collection of Birds made by Mr. Geoffrey Archer during a Journey to the Ruwenzori Range." By F. J. Jackson, C.B., C.M.G. With Notes by R. Bowdler Sharpe, LL.D.

This paper describes 182 species of birds obtained by Mr. Archer during a stay of about five months, from January to June 1902, in the district. Mr. Archer marched from Entebbe through Toro and the Kibera Forest to Fort Portal; thence to Ruwenzori, Lake Albert Edward, Kangao's, Katwe, Toro Forest and Ankole, to Nairobi. A large number of South African species were met with, such as *Columba arquatrix* (Olive Pigeon), *Turtur semitorquatus* (Red-eyed Dove), *Turtur senegalensis* (Laughing Dove), *Chalcopelia afra* (Emerald-spotted Dove), *Stephanibyx inornatus* (Swainson's Plover), *Totanus glareola* (Wood Sandpiper), *Nettion punctatus* (Hottentot Teal), *Nyroca erythrophthalma* (South African Pochard), *Circus cinereus* (Montagu's Harrier), *Circus vanivorus* (South African Harrier), *Buteo augur* (Augur Buzzard), *Buteo desertorum* (Steppe Buzzard), *Aquila wahlbergi* (Wahlberg's Eagle), *Coracias caudatus* (Moselikatzé's Roller), *Eurystomus afer* (Cinnamon Roller), *Halecyon chelicuti* (Striped Kingfisher), *Rhinopomastus cyanomelas* (Scimitar-bill), *Melittophagus meridionalis* (Little Bee-eater), *Merops persicus* (Blue-checked Bee-eater), *Caprimulgus na-*

talensis (Natal Nightjar), *Cypselus africanus* (White-bellied Swift), *Hapaloderma narina* (Narina Trogon), *Coccyzus jacobinus* (Black-and-White Cuckoo), *Cuculus gularis* (South African Cuckoo), *Cuculus solitarius* (Red-chested Cuckoo), *Chrysococcyx smaragdineus* (Emerald Cuckoo), *Chrysococcyx eupreus* (Didric Cuckoo), *Centropus cupricauda* (Bronzy-tailed Coucal), *Indicator sparrmani* (Sparman's Honey-Guide), *Hirundo rustica* (European Swallow), *Hirundo puella* (Smaller Stripe-breasted Swallow), *Bias musicus* (Black-and-White Flycatcher), *Campophaga nigra* (Black Cuckoo Shrike), *Schænicola apicalis* (Fan-tailed Reed Warbler), *Phylloscopus trochilus* (Willow-Wren), *Lanius collurio* (Red-backed Shrike), *Laniarius sulphurepectus* (Orange-breasted Bush Shrike), *Telephonus senegalus* (Black-headed Bush Shrike), *Nilus nigritemporalis* (Black-browed Brubru Shrike), *Cinnyris eupreus* (Coppery Sunbird), *Anthus trivialis* (Tree Pipit), *Mirafra fischeri* (Fischer's Lark), *Vidua principalis* (Pin-tailed Widow Bird), *Colopasser ardens* (Red-collared Widow Bird), *Pyromelana flammiceps* (Zambesi Bishop Bird), *Pytelia melba* (Southern Red-faced Weaver Finch), *Lagonosticta rhodopareia* (Heuglin's Ruddy Waxbill), *Dicrurus afer* (Fork-tailed Drongo), and *Dilophus carunculatus* (Wattled Starling).

7. "On the Correct Name of the Pied Flycatcher." By Ernst Hartert, Ph.D.

The author proves satisfactorily that the correct Latin name for this species is that given to it by Linnæus, *Muscicapa atricapilla*, in 1766.

8. "Proceedings at the Anniversary Meeting of the British Ornithologists' Union, 1906, held on May 30th, 1906."

The proceedings disclosed a membership of 396 Ordinary Members, 2 Extra-Ordinary Members, 9 Honorary Members, 5 Colonial Members, and 18 Foreign Members.

Dr. F. Du Cane Godman, F.R.S., was re-elected President, and Mr. Howard Saunders, Secretary. Dr. P. L. Selater, D.Sc., F.R.S., and Mr. A. H. Evans, M.A., were elected Editors of 'The Ibis' for the 9th Series.

Twenty-five new Members were elected, including Mr. G. L. Bates, C.M.Z.S., Kribi, Cameroon, West Africa, and Mr. John A. Bucknill, M.A., F.Z.S., Pretoria, Transvaal.

The October (1906) number of 'The Ibis' contains the following papers:—

1. "Field-Notes on the Birds of Chinkiang, Lower Yangtse Basin.—Part II." By J. D. D. La Touche, C.M.Z.S., M.B.O.U.

This is a second instalment of the paper commenced by the author in the July (1906) issue of this periodical. The avifauna of this part of the world does not contain many species with which our sub-continent is acquainted. *Cotile riparia* (European Sand-Martin) is perhaps the only species mentioned in this section of Mr. La Touche's paper (which embraces the Laniidæ to the Alaudidæ) with which South African ornithologists are acquainted.

2. "Notes on the Parrots (Part VI.)." By T. Salvadori, H.M.B.O.U.

A continuation of the author's check-list. This portion includes our *Paecephalus robustus* (Levaillant's Parrot), *P. fuscicollis* (Brown-necked Parrot), *P. fuscicapillus* (Brown-headed Parrot), *P. meyeri* (Meyer's Parrot), which is now apparently divided into several forms or subspecies, namely:—

- (a) *P. meyeri*—the type—confined, according to Neumann as followed by Dr. Reichenow, to Kordofan and Abyssinia.
- (b) *P. matschiei* = *P. meyeri matschiei*. Habitat: E. Africa.
- (c) *P. erythraea* = *P. meyeri erythraea* (Neumann) = *P. meyeri virescens* (Reichenow). Habitat: N.E. Africa: Bogos-land, Anseba River.
- (d) *P. transvaalensis* = *P. meyeri transvaalensis*. Habitat: Southern East Africa.
- (e) *P. damarensis* = *P. meyeri damarensis*. Habitat: Western South Africa.
- (f) *P. reichenowi* = *P. meyeri reichenowi*. Habitat: North Angola and probably the whole Congo district.

The differences existing between the various subspecies are slight and some intermediate forms have been noticed. According to Capt. Alexander, our subspecies (*d*) does not differ from the type (*a*).

The *P. rueppelli* (Rüppell's Parrot) is also included.

3. "On an unnamed Species of Owl from South Africa."

By W. R. Ogilvie-Grant.

The late Von Erlanger separated the northern form of *Scops leucotis* = *Asio leucotis* (ranging from Senegal to Abyssinia and Somaliland) from the southern form met with in S. Africa. Von Erlanger named the northern form *Asio leucotis nigrorertex*, but retained the typical name *Asio leucotis leucotis* for the southern species. Temminck, however, in 1824 in naming the typical form originally from Senegal had used the nomenclature *Strix leucotis*. Consequently the northern form must retain the typical name, i. e. *Asio* (or, as is now recognized, *Scops*) *leucotis*, and the southern form must be re-named. The northern form will therefore be known as *Scops leucotis* and the southern form as *Scops erlangeri*. The separation of the two species is based upon the southern form having the dark bars on the primary quills and tail-feathers much wider and less numerous than in the northern species and in lacking the uniform black patch on the crown, all the feathers of that part, even in the darkest specimen, being mottled with black and white.

4. "The Breeding-grounds of the Rosy Gull.—Part III."

By S. A. Buturlin.

The author gives further details of his discovery of the nesting of this species in the Kolymá delta, in the province of Takutsh, North-east Russia.

5. "On the Birds collected and observed during the Voyage of the 'Valhalla,' R.Y.S., from November 1905 to May 1906." By Michael J. Nicoll, F.Z.S., M.B.O.U.

A very short account of this voyage has already been given in this journal (*vide*, p. 122, No. 2, vol. ii.). The present paper gives a systematized and scientific account of the ornithological results of the expedition. The voyage must have

been extraordinarily interesting, and it is hard to imagine a more delightful way of avoiding a European winter than enjoying the luxury of a cruise in southern waters on a magnificent vessel such as the 'Valhalla,' whilst to an ornithologist the frequent visits to almost unknown islands, the exploration of which undertaken without hurry was almost sure to result in the discovery of rare and isolated species—some probably new to science—must have been the source of the keenest pleasure. Alas! such joys are not for all of us, and we can only read and think what a glorious holiday such an adventurous trip would be. Mr. Nicoll has written a charming account of his voyage, and it is only to be regretted that it is too long to be here reproduced. In lat. $7^{\circ} 14' S.$, long. $34^{\circ} 25' W.$, the author and Mr. Meade-Waldo saw a remarkable sea-creature quite of the proper "sea-serpent" type (*vide* Proceedings Zoological Society, June 19th, 1906). The route has already been given in this journal, and the following notes, which are of interest to South African ornithologists, are extracted from the scientific portions of the author's paper.

On South Trinidad Island, *Gygis alba* = *G. candida* = *G. craxfordi* (?) was found in enormous numbers. The *Gygis alba*, or, as Selater calls it, *G. candida* (White Noddy), which has not been recorded from the Cape, but was found by Layard near Madagascar, is separated by Mr. Nicoll from the species found on this Island; the latter Mr. Nicoll calls *G. craxfordi*. These Terns were so tame that they could easily be caught in a butterfly-net whilst hovering in the air! They were nesting, as was also *Anous stolidus* (Noddy), of which some examples have been obtained in the Cape Seas. Here also *Fregata aquila* (Frigate Bird) was seen in large numbers.

At Martin Vas Islands, some twenty miles away, *Sterna fuliginosa* (Sooty Tern) and *Micranous leucocapillus* (Lesser Noddy) were observed. Between these Islands and Tristan d'Acunha *Diomedea exulans* (Wandering Albatross) and *Oestrelata incerta* (Schlegel's Petrel) were noticed, whilst on nearing the latter Island quite a number of Cape Sea-birds

were seen, including *Majaqueus arquinoctialis* (Cape Hen), *Æstrelata mollis* (Soft-plumaged Petrel), *Æstrelata incerta* (Schlegel's Petrel), *Puffinus assimilis* (Gould's Little Shearwater), *Diomedea exulans* (Wandering Albatross), *Thalassogeron chlororhynchus* (Yellow-nosed Mollymawk), and *Phæbæria fuliginosa* (Sooty Albatross). At Tristan d'Acunha *Puffinus gravis* (Great Shearwater) was noticed in pairs; *Sterna vittata* (Kerguelen Tern) and *Thalassogeron chlororhynchus* (Yellow-nosed Mollymawk) were found nesting. *Stercorarius antarcticus* (Antarctic Skua) and *Fregatta grallaria* (White-bellied Petrel) were noticed, and a new Diving Petrel called by Mr. Nicoll *Pelecanoides ducunhur* was discovered. Apparently only one land bird—a Thrush, *Nesocichla eremita*—now exists on the island.

Nearing the Cape, *Æstrelata macroptera* (Long-winged Petrel) was observed.

A visit to Dassen Island was taken on February 3rd; during this trip, besides *Spheniscus demersus* (Jackass Penguin), *Phalacrocorax capensis* (Trek Duiker), *Larus dominicanus* (Southern Black-backed Gull), *Sula capensis* (Malagash), *Phalacrocorax neglectus* (Bank Duiker), *Diomedea melanophrys* (Mollymawk), *Ibis aethiopicus* (Sacred Ibis), and other common species, a specimen of the Noddy (*Anous stolidus*) was seen.

Mr. Nicoll was evidently much impressed with the Jackass Penguins on Dassen Island, which, to use his own words, "collected in several dozens outside the house during the night and kept up a continual braying exactly resembling that of an ass."

On Dassen Island itself, *Motacilla capensis* (Cape Wag-tail), *Hematopus moquini* (Black Oyster-Catcher), *Ægialitis pecuaria* (Kittlitz's Sand Plover), *Calidris arenaria* (Sanderling), *Arenaria interpres* (Turnstone), *Pavoncella pugnax* (Ruff), *Ossifraga gigantea* (Giant Petrel), and *Hirundo rustica* (European Swallow) were noticed.

Excursions were made to Table Mountain and Kalk Bay under the guidance of Mr. W. L. Selater, and Mr. Nicoll made a small collection of birds chiefly representing species

which are familiar to most of us, but amongst which may be mentioned *Anthobaphes violacea* (Orange-breasted Sunbird), *Chrysomitris totta* (South African Siskin), and *Procellaria pelagica* (Storm Petrel).

After proceeding to Durban it was intended to visit Europa Island and other islets in the Mozambique channel, but a heavy cyclonic gale sprung up and prevented any stoppage at these places, the first halt being made at Mayotte, one of the Comoro Islands, which was reached on February 23rd.

The avifauna of these islands and also of all the numerous strings of islands in this part of the Indian Ocean is extraordinarily interesting. Ornithologists very seldom visit them, and it is not surprising to find that Mr. Nicoll was able to describe quite a number of new species. Most of these groups of islands and some individual islands have some indigenous species or, at any rate, well-marked local forms.

On Mayotte Mr. Nicoll collected specimens of twenty-eight species, including a new *Terpsiphone* (Flycatcher) named *lindsayi*, and a new Swift, *Cypselus mayottensis*. On this island the following South African species were found:—

Corvus scapularis (Pied Crow). Very common.

Corythornis cyanostigma (Malachite Kingfisher). Very common.

Merops persicus (Blue-checked Bee-eater). Very common.

Falco subbuteo (Hobby). One specimen.

Milvus korschun (Black Kite). Very numerous.

Bubulcus ibis (Cattle Egret). Abundant.

Butorides atricapilla (Green-backed Heron). Fairly numerous.

? *Turtur capicola damarensis* (Damara Turtle Dove).

? *Egialitis marginata pallida* (Tropical White-fronted Sand Plover).

Dromas ardeola (Crab Plover). Noticed in flocks of from twelve to thirty.

Numenius phaeopus (Whimbrel). Very abundant.

Numenius arquatus (Curlew). A great many observed.

Totanus hypoleucus (Common Sandpiper). Very common in February.

Sterna cantiaca (Sandwich Tern). In small numbers.

Sterna media (Smaller Crested Tern). The commonest Tern on Mayotte.

After a stay of five days at Mayotte, the next stoppage was at Diego Suarez in the very north of Madagascar, where a visit was paid to the Forêt d'Ambre, six hundred miles in length. A collection of twelve species was here made.

Glorioso Island was reached on March 10th. Noddies (*Anous stolidus*) were nesting in thousands and a few *Sula leucogastra* (Brown Booby).

On Glorioso, *Corvus scapulatus* (Pied Crow) is resident. *Dromas ardeola*, *Numenius phaeopus*, *Sterna cantiaca*, and *Fregata aquila* were the South African species met with.

Assumption Island was visited on the 12th. Here *Sula cyanops*, *Fregata aquila*, *Anous stolidus*, *Corvus scapulatus*, *Ardea cinerea* (Grey Heron), *Gygis candida* (White Noddy), and *Phaëthon rubricauda* (Red-tailed Tropic Bird) were noticed amongst other species.

On March 14th Aldabra Island was reached. Here a specimen of *Cuculus canorus* (European Cuckoo) was believed to have been seen, and in addition *Corvus scapulatus*, *Dromas ardeola*, *Squatarola helvetica* (Grey Plover), *Calidris arenaria*, and *Arenaria interpres* were noticed.

A visit to the Islands of Cosmoledo and Astone (hitherto unvisited by naturalists) was intended, but a current carried the yacht ashore on the leeward side of Assumption, where it remained fast for twenty-four hours, luckily getting off without damage. It was, however, deemed advisable to get to some port as soon as possible. On the 22nd of March the Seychelles were reached, the yacht anchoring at Mahé and the Islands of Praslin and Felicité being visited.

On Mahé *Gygis candida* was the only South African bird seen, on Praslin *Butorides atricapilla*, and on Felicité no species known to our limits.

On April 8th the Seychelles were left, Aden being reached on the 14th. A considerable number of migrants came on

board at Aden, 14th of April *Coracias garrulus* (European Roller), in the Red Sea 19th of April *Saxicola cinerula* (European Wheatear), and 20th and 23rd of April *Hirundo rustica* (European Swallow). On the 23rd Port Said was reached, on May 5th Gibraltar, and on May 13th anchor was dropped at Cowes. The cruise was over. 187 days had been spent and 19,851 miles covered in the yacht. As Mr. Nicoll says: "The most interesting voyage I have ever made."

If it is at all permissible to generalize from the results of Mr. Nicoll's visit to these East African Islands, it may perhaps be remarked that the avifauna of these islands has not, notwithstanding the comparatively large number of birds noticed thereon which are found at times in South Africa, fundamentally very much close similarity to that of our own limits. The Ethiopian Region—one of the six great regions of the Globe into which the geographical area of the distribution of birds is divided—embraces practically the whole of Africa and includes Madagascar and its neighbouring islands; but this main region is tentatively divided into four provinces: (1) Libyan, again divided into Arabian, Egyptian, Abyssinian, and Gambian subprovinces; (2) Guinean, comprising what is familiarly known as the "West Coast," roughly extending from Sierra Leone to the south of the Congo valley; (3) Caffrarian, roughly our own limits and including St. Helena; and (4) Mosambican or East Coast, with a very well-marked Madagascar province or subregion.

Madagascar by many is thought well worthy of specific Region rank, and no part of the world exceeds this island in the curiosities and peculiarities of its avifauna. With some 250 species, containing 35 or more specific and peculiar genera and over 130 indigenous species, it is not surprising that Madagascar is a puzzle.

The islands in this neighbourhood visited by Mr. Nicoll all, as might be expected, show much more affinity in their avifauna to Madagascar than to our South African limits.

Indeed, with the exception of *Corvus scapularis*, which ranges over the whole of Africa to the South of the Sahara, and *Merops persicus*, which, besides being migratory has an enormous range, there is little to show any influence upon the avifauna of these islands due to their comparative proximity to our South Africa, all the other species which appear in the lists of both these islands and our sub-continent being migrants whose passage lines fall on both places. The nearest allies to the birds of these islands are in Madagascar, but the number of species peculiar to these small islands themselves "make," to use Professor Newton's words, "the Comoro Islands one of the best examples in the world where species may be seen in the process of specification"; whilst the land birds of the Seychelles, which have not obviously been introduced, are almost all peculiar to those islands.

Space unfortunately forbids a close analysis of the results of Mr. Nicoll's work here, but they bear out the conclusions already drawn by Messrs Milne-Edwards and Oustalet.

J. A. B.

2. 'The Avicultural Magazine,' April, May, June, and July, 1906.

The April number contains very little of special interest to South African ornithologists.

The May number contains an article entitled "Aviculture in South Africa," by Capt. B. R. Horsburgh, A.S.C., M.B.O.U., and a member of our Union. He says the Violet-eared Waxbill (*E. granatina*) is called the Love-bird along the Modder River, where it is a "scarce resident." He found the Scaly-feathered Weavers (*Sporopipes squamifrons*) "breeding in the bush along the Modder River literally in thousands. In one small acacia or wait-a-bit thorn about 20 feet high there were over two hundred nests. . . . All had eggs or newly-hatched young, and the noise reminded me of Cicadas." A pair bred in his aviary and reared one young one, exactly like the adult, but with a

dull yellow beak with a black spot on the end of it, and without the shield of scaly feathers on the head. The White-browed Weaver (*Ploceipasser mahali*) Captain Horsbrugh found very pugnacious in the aviary.

This number also contains a short sketch, "A Morning's Bird-nesting on the Nile."

The June number contains an article on the Maiden Dove (*Chalcopelia puella*), by Dr. A. G. Butler, illustrated by a coloured plate.

The July number contains "Some Notes on the Sacred Ibis," by Michael J. Nicoll, M.B.O.U. This is a short account of a visit to Dassen Island by the Earl of Crawford's yacht the 'Valhalla.' Mr. Nicoll thinks that the stories told of the young Ibises killing the young Cormorants and devouring their entrails is apparently quite true, as all the young Ibises when first handled disgorged a mass of entrails. The article is illustrated by a photograph of two half-grown Ibises.

A. H.

3. '*The Avicultural Magazine*,' August, September, and October, 1906.

The August number contains a lengthy paper on the Violet-eared Waxbill (*Estrilda granatina*), by Reginald Phillips, illustrated by a well-coloured plate of a male and female by Grönvold. We are pleased to find the author likes the song of the male: "the low-voiced song, floating softly on the air, often reminds me of our Skylark warbling so sweetly high up in the heavens." The author appears to doubt Dr. Symond's remarks in the *Journal*, vol. ii. p. 27, regarding these birds occasionally consorting together in flocks, on the strength of the "nature of the species so far as it has been developed and displayed in my aviary." Dr. Symonds has been in Kroonstad since 1879 and ought to know their habits, if anyone does, as they are very far from uncommon there, as the writer knows from personal observations.

The same number contains an article on the breeding

of the Tambourine Dove (*Tympanistria tympanistria*), by Dr. A. G. Butler. Dr. Butler succeeded in getting his pair of birds to sit and bring forth a pair of young, one of which died at 19 days of age from the effects of falling out of the nest. Dr. Butler gives a complete description of the feathering at this age. The other young bird lived to maturity. The development is apparently much slower than that of the young of Turtle Doves, and the young Tambourine could not even fly at 3 weeks old.

The September number contains nothing of special interest to South African ornithologists.

The October number contains an interesting article on Hybrid Ploceidæ, by Dr. A. Butler. He gives a *résumé* of all known hybrids which have occurred in this family. There is also an account of the breeding in captivity of our Red-headed Finch (*Amadina erythrocephala*), by W. G. Teschemaker. According to the author's interesting observations, this species is very slow in the development of the young. Amongst the notes, &c., we see that Mr. J. H. Gurney successfully bred the Jackal Buzzard (*Buteo jakal*): we wish him joy. A. H.

4. *The Proceedings of the United States National Museum*, vol. xxx., contains a paper by Mr. Harry C. Oberholser, Assistant Ornithologist to the Department of Agriculture, on "Birds from German and British East Africa." This paper calls for little comment beyond the fact that we have to record some more of the authors "corrections" regarding the nomenclature of our birds. We fail to see why such a well-known generic name as "*Cossypha*" should be changed just because a *beetle* happens to bear the name of "*Cossyphus*."

5. *Annual Report, Giza Zoological Gardens, Egypt.*

We have received the Seventh Annual Report of the Director of the Zoological Gardens at Giza, near Cairo, Egypt. A feature of the gardens is a large lawn on which

the following wild birds “characteristic of the Nile live together in a state of comparative freedom”: Whale-headed Stork, Saddle-billed Stork, Sacred Ibis, Crowned Crane, Demoiselle Crane, Grey Crane, Flamingo, Egyptian Goose, Spur-winged Goose, and Brown-necked Raven. The total number of birds in the gardens was 662, apportioned to 145 species. The Great Spotted Cuckoo (*Coccyzus glandarius*) was observed wild in the gardens. The Director, Captain Stanley Flower, F.Z.S., is certainly to be congratulated on the results of his labours.

6. *The ‘Aquila’ (the Organ of the Hungarian Bureau of Ornithology)*, vol. xii, 1905, has reached us. It is printed in two languages, Hungarian and German, but this number contains an article in English by Professor Alfred Newton, M.A., F.R.S., titled “The Naumann Festival at Cöthen”*, from which the following extracts are worthy of quotation:—

“Naumann is but a name to nine out of ten British ornithologists, and the proportion of them who have held in their hands a volume with that name on the title page must be smaller still. Yet it was borne by two men who, taking them all round, were the most practical ornithologists that ever lived, for their personal knowledge of the birds of Central Europe was not exceeded by that of any of their contemporaries, and it may be fairly doubted whether any of their successors, vastly improved as are the modern means of acquiring such knowledge, have attained to the like acquaintance.” Professor Newton gives a brief biographical sketch of father and son, and winds up with a short appreciation of their work. He says:—“Making every allowance for the ordinary Englishman’s linguistic deficiencies, it is not to the credit of our predecessors in this country, though there are many of whom we may be justly proud, that until the year 1850 not one of them seems ever to have heard of the Naumanns and their incomparable works.” In inserting

* Originally published in ‘Nature.’

in this article the Editor remarks : " we have published in full this excellent article from the pen of one of the greatest of living ornithologists as it throws a light on the peculiar and remarkable conditions existing between English and continental naturalists, and serves to show how English ornithologists stand with regard to the endeavours of foreign ornithologists. This is difficult for us to comprehend, who consider a knowledge of the principal works of other countries essential for the proper furtherance of natural science."

In a sketch entitled " Report on the Results of the 4th International Ornithological Congress," Titus Csörgey laments the fact that as far as economic (*i. e.* Agricultural) ornithology is concerned the Congress was a failure, owing to the fact that none of the States carried out the resolutions passed at the 3rd Congress in 1900, consequently, with the exception of Hungary, no such reports were handed in. The Author says that judging by what he saw in London, Tring, and the Duke of Bedford's world-renowned Park, the intervention of the Government as regards Bird protection in England was hardly necessary. " The love for animals, which is truly a characteristic of the Briton, is naturally extended to the Birds, and their strong society carries out that which Continental Societies of a like nature would like to push on to the shoulders of Government."

This number also contains an article titled " Ornithological Observations from Fiume to the Sahara." It is really a short sketch of South European migrants observed from Fiume to the Sahara.

A. H.

7. Capt. Shelley's 'Birds of Africa.'

The first part of vol. v. of Shelley's 'Birds of Africa' (London : R. H. Porter, 1906 ; price £1 11s. 6d.) has been recently published. This part deals with the families Oriolidæ, Sturnidæ, and Corvidæ. The first contains nine, the second fifty-seven, and the third nine species. Seven coloured plates figuring eleven species are given, including *Lamprocolius melanoqaster* (Black-bellied Glossy Starling).

8. *The Proceedings of the Academy of Natural Sciences of Philadelphia.*

In the 1905 volume, pp. 755-782, appears a paper by Mr. Witmer Stone on a collection of Birds made by Mr. G. L. Harrison, jun., in 1904 in the central part of the Protectorate of British East Africa. Two hundred and twelve species are recorded, including a new *Cisticola*.

9. *Oustalet on Birds from Lake Tchad.*

A pamphlet of some importance has recently been issued entitled 'Catalogue des Oiseaux rapportés par la Mission Chari-Lac Tchad,' by M. Oustalet. This paper, published in the Bull. Mus. d'Hist. Nat. x. pp. 131 and 536 (1904), and xi. p. 10 (1905), is a catalogue of birds collected by a French expedition to Lake Tchad. It mentions 107 species and describes a new species, *Cinnyris decorsei*.

10. '*Liberia*,' by Sir Harry Johnston.

Attention should be drawn to a work on '*Liberia*' by Sir Harry Johnston, G.C.M.G., K.C.B., &c., published by Hutchinson & Co., 1906 : 2 vols. 8vo. London. Price 42s.

The second volume contains an account of the Avifauna of the country and a list of all the known species, 260 in number, prepared for the author by Mr. Chubb, of the South Kensington Museum.

11. *The Annals of the Carnegie Museum.*

In vol. iii. p. 352 (1905) appears a List of the Birds collected near Mombasa, East Africa, by William Doherty. The list is published by Dr. W. J. Holland : the collection was made in September and October, 1900 ; it contains the names of 106 species.

12. *Report of South African Museum, 1905.*

The Report of the South African Museum (Cape Town) for the year ending 31st December, 1905. shows that during

that period a considerable number of valuable additions were made to the Ornithological section of that Institution.

Dr. Stoehr's collection of 210 skins from North-east Rhodesia and a collection of 138 Birds' eggs—all South African—from Major Sparrow are worthy of particular mention.

A Sunbird, new to the South African list (*Nectarinia killimensis*), was received from the Melssetter district, Southern Rhodesia.

13. 'Zoological Record: Aves,' vol. xlii. Price 6s. (1905.)

This very useful compilation of Dr. Sharpe's should certainly be in the hands of every working ornithologist, as it shows at a glance what literature has appeared during the year on any special group. We would, however, respectfully draw the author's kind attention to the fact that No. 1, vol. i. of the Journal of the S.A.O.U. has apparently been overlooked. We can find no mention of Major Sparrow's excellent paper, nor of any of the others appearing therein. The papers in Number 2 are duly mentioned.

14. U.S. Department of Agriculture, Biological Survey, Bulletin No. 26: on the "Distribution and Migration of North American Ducks, Geese, and Swans," by Wells W. Cooke, Assistant Biological Survey.

This well-printed pamphlet gives the range, abundance, and migration of the various species, in order to assist legislative enactment, as waterfowl are "steadily diminishing in numbers" in the United States. The principal causes of this increasing scarcity are "markets, hunting, spring shooting, and the destruction of the breeding-grounds for farming purposes." Sixty-four species of Ducks, Geese, and Swans are said to inhabit the United States, eleven of which are only of "accidental" occurrence, leaving 53 regular inhabitants. These pamphlets are of great interest to us, as the day may come—and that not very far ahead—when we may have to adopt drastic measures if we wish many of our bird-ornaments of the veld to survive.

15. '*Journal für Ornithologie*,' Nos. 3 & 4 (July and October, 1906, & "Sonderheft."

The July number contains a lengthy paper (with portrait) by Herman Schalow on the illustrious German ornithologist Jean Cabanis, of whom we publish an "obituary notice" in this number.

The October 1906 number of this excellent German Journal contains the following papers:—

1. "Unpublished Diaries of Baron von Kittlitz" (conclusion).
2. "Systematic Review of my Java Birds," by Max Bartels (conclusion).
3. "On Lower Amazonian Birds," by E. Sneathlage (continuation).
4. "Some Questions of Nomenclature," by Prof. Dr. Einar Lönnberg.

The latter is a common-sense review of the present chaos ornithology has been thrown into by the "priority" seekers and hair-splitting enthusiasts of our day. "The international rules of nomenclature have for some years now been accepted and fixed upon. Under the circumstances there is only one way of preventing further confusion, and that is to follow the said rules throughout, whether they be considered right or lamented as wrong,—or whether a mixture of the good and bad would be preferable. In any case it would appear best to curtail the curse and adopt as soon as possible all alterations appearing necessary under the international rules of nomenclature. Many of these alterations are to my mind greatly to be regretted, and it would have been infinitely better if we could have retained the old names which all know so well." Remarks with which we must admit we fully concur. Dr. Lönnberg gives details of several instances, and dissects the evidence of each alteration.

5. "Investigations into the Food-supply of various Owls," by Baron von Schweppenburg.

This is a lengthy, carefully worked out statement of the various articles of diet indulged in by Owls, giving percentages and diagrams of each species treated. We see that

the Barn Owl (*Strix flammea*) consumes 0·20 per cent. moles, 30·30 per cent. shrews, 0·20 per cent. bats, 0·20 per cent. rats, 23 per cent. mice, 44·30 per cent. voles, 1·50 per cent. birds, and 0·40 per cent. frogs. A. H.

16. 'Ornithologische Monatsberichte,' April to December, 1906. 9 numbers.

The only paragraph in these journals which calls for remark is the statement of the Editor regarding the nest of *Turacus corythaiæ*. In reviewing Journal S.A.O.U. vol. i. no. 2, he states that it includes a photograph of this bird *situated on the ground under a bush*, whereas the photo is of a nest in a tree some ten or twelve feet above the earth. Of course this is not clear in the photograph, but neither is there any indication of *ground* in it. The Loury has never been known to nest on the ground. The November number contains a paper titled "New Species from Africa," by Dr. Reichenow. A new species of Weaver Bird (*Pyromelana marwitzi*) and a new Swift (*Apus rochli*) are described, besides five new subspecies from "Mkalama and Usambara," wherever these places may be. A. H.

The October '06 number contains nothing of any interest to South African ornithologists, and only one short article of general interest on "The Sociability and Unsociability of Captive Birds," by Fr. Braun. He quotes various instances of change in mode of life and temperament undergone by certain birds in confinement. A. H.

XI.—Obituary Notices.

JEAN LOUIS CABANIS, who died at the great age of ninety, near Berlin, was one of the greatest Ornithologists whom the world has yet produced. For fifty years officially connected with the Zoological Museum of the University of Berlin, Cabanis was enabled to use the advantages offered to him by his position with the greatest zeal and success.

He was the founder of the 'Journal für Ornithologie':

he described well over four hundred new species of birds, whilst more than twenty are named after him; Reichenow (his son-in-law), Gadow, Hartert, Leverkühl, and many other famous ornithologists were his pupils; he himself served under Lichtenstein. He published and edited many ornithological works—on the Birds of Peru in conjunction with Dr. Tschudi in 1845–6; on the classification of the Passeres in 1847; on the Birds of British Guiana in 1848; on the description of the ornithological collection of Herr F. Heine, of Halberstadt, he spent thirteen years (1850–63), the matter being published in a production entitled ‘Museum Heineanum’; he described Gumlach’s collections from Cuba; Hoffman and v. Frantzius’s collections from Costa Rica; and in 1869 Baron von der Decken’s collections from East Africa. In our own South African nomenclature his name is perpetuated by such species as *Hyphantornis cabanisi* (Cabanis’s Weaver Bird) and *Turdus cabanisi* (Cabanis’s Thrush).

Cabanis was born in Berlin and there educated: he travelled for some time in North America; at the age of twenty-six he was attached as an assistant to the Museum of the Berlin University; he retired in 1892. He was elected an Honorary Member of the British Ornithologists’ Union in 1860. He died at Friedrichshagen on Feb. 28th, 1906.

It is from such men as Cabanis, who enjoy a permanent and secured public position, and who are thus able without fear of the present or future to devote unreservedly their whole thoughts and work to the study of one particular branch of science during the whole of their life, that knowledge of profound and valuable character may be expected to be forthcoming. That continuity of purpose and systematic investigation which is rendered possible under conditions such as these is in itself sufficient to justify its trial in a country such as our own.

CANON HENRY BAKER TRISTRAM, who died at Durham on March 8th, 1906, at the age of 81, was a distinguished Divine, Author, and Naturalist. He travelled extensively in Algeria

between 1855 and 1861, but perhaps was better known for his association with Palestine, which he frequently visited. In 1860 he published 'The Great Sahara,' in 1865 'The Land of Israel,' in 1873 'The Land of Moab,' and in 1884 'The Fauna and Flora of Palestine.' He was one of the founders of the British Ornithologists' Union and was elected a Fellow of the Royal Society in 1868. He was an ardent collector, and in 1896 his Birds, which contained some 20,000 specimens representing some 6000 species, were acquired by the Free Public Museums at Liverpool.

His egg collection was about the same time purchased by Mr. Crowley, of Waddon, in Surrey, and at Mr. Crowley's decease passed with the remainder of that gentleman's splendid collections into the hands of the British Museum.

He was educated at Durham School and Lincoln College, Oxford; ordained Deacon in 1845 and Priest in 1846; was naval and military chaplain at Bermuda in 1847-49; was Rector of Castle Eden in Durham from 1849-60; Rector of Greatham from 1860-73, when he was appointed Canon of Durham, where he lived the remainder of his life.

Dr. VICTOR FATIO, the well-known Swiss ornithologist, died at Geneva (where he was born) on the 18th March, 1906, at the age of sixty-seven. He was the leading authority on Swiss ornithology as well as being closely engaged in studying for many years the vine-pest, the "Phylloxera" insect. He published, amongst other works, a Catalogue of Swiss Birds in three parts (1889, 1894, and 1901), and 'Histoire Naturelle des Oiseaux,' which constituted two volumes of his 'Faune des Vertébrés de la Suisse' (1899 and 1904).

He was a Foreign Member of the British Ornithologists' Union, having been elected in 1872, and represented Switzerland at many Ornithological Congresses.

ÉMILE OUSTALET, the well-known French ornithologist, died on 23rd October, at St. Cast (Côtes du Nord), after a painful though short illness. Born in August 1844, he

succeeded Verreaux in the Muséum d'Histoire Naturelle. After the demise of Alphonse Milne-Edwards he became Professor of Mammalia and Aves, which post he held till his death. In 1880-1 his masterly work on the Hemipode family appeared. His name, however, remains indelibly stamped upon the memory of ornithologists through his great knowledge of the birds of China, and in 1887 he published, in conjunction with Armand David, his 'Birds of China' ('Les Oiseaux de la Chine').

He was President of the 3rd Ornithological Congress which was held in Paris in 1900. Many birds bear his name and afford striking testimony to the esteem and regard in which his fellow ornithologists held him. Several species were named by him. He was a C.M.Z.S. and an Honorary Member of both the British and American Ornithologists' Unions.

SIR WALTER LAWRY BULLER.—Sir Walter Buller was best known as the official authority upon the Birds of his native country, New Zealand, upon which subject he produced several very valuable works. Of these the most important was 'A History of the Birds of New Zealand,' the first edition of which appeared in 1873, the second in 1887-88, and a Supplement so recently as 1905-6.

Sir Walter was of service to his Colony in many ways: he was a Native Commissioner and Resident Magistrate from 1862-1872: served in the Maori War of 1865; and represented New Zealand at the Colonial Exhibition of 1886, and the Paris Exhibition of 1889, besides being on the governing body of the Imperial Institute. He was called to the English Bar in 1874; was a Doctor of Science of Cambridge; a Fellow of the Royal Society (1879); and received his K.C.M.G. in 1886. He was the possessor of many foreign orders. He was born in New Zealand and died in Hampshire, England, on July 19th, 1906, at the age of 68.

C. B. SIMPSON, M.A., B.Sc., Govt. Entomologist of the Transvaal.—Mr. Simpson was born in California in 1876. From



THE LATE DR. EDMOND SYMONDS,
Vice-President S.A.O.U.

there he went to Idaho to reside, and took his B.Sc. degree for the University of Idaho; later on he attended Cornell University, in New York State, where he took his Master's degree in 1901. Subsequently he became a Member of the Bureau of Entomology of the United States of America, Department of Agriculture, as a field investigator.

In 1903 he was recommended by the U.S.A. Entomologist to the position of Government Entomologist for the Transvaal, which position he filled until his death in Pretoria, from enteric fever, on 15th January, 1907. He was married quite recently to a local young lady, to whom we extend our heartfelt sympathy.

Dr. EDMOND SYMONDS, Vice-President S.A.O.U.—It is with more than ordinary regret that we have to announce the death of the genial Vice-President of the S.A.O.U. in the person of the late Dr. Symonds, of Kroonstad, O.R.C.

Born in 1853 at Felstead in Essex, England, he was the son of the Rector of Thaxted (Essex). He was educated at the Felstead Grammar School, and studied medicine at the University College, London, qualifying as M.R.C.S. in 1875 and as L.R.C.P. two years later. He then went to sea as a Surgeon in the employ of the Eastern Telegraph Company for two years, and was associated in practice for a short period with Dr. Henry Grace, brother of W. G. Grace, the famous cricketer.

Dr. Symonds landed in Port Elizabeth in 1879 and went straight up to Kroonstad, where he practised his profession till his death. He died on 10th April of malaria and apoplexy. He was a well-known figure in Kroonstad, beloved by all who knew him. In 1887 he published a lengthy paper on the birds of Kroonstad in 'The Ibis,' and was a friend and correspondent of the well-known ornithologist J. H. Gurney.

To readers of the 'Journal' his name is of course well known, and at the last annual meeting he was elected a Vice-President of the Union.

His article in this Number has a melancholy interest, as he was not destined to see it in print

Dr. Symonds was an enthusiastic naturalist and a most hospitable host: one of his greatest delights was to show visitors the beauties and bird-life of the Valsch River, which almost encircles Kroonstad.

He will be greatly missed, not only by the S.A.O.U. but by the Transvaal Museum and Zoo, to which institutions he was a frequent and valued contributor.

The greatest sympathy is extended to his wife and five daughters in their sad bereavement. A. H.

THE JOURNAL
OF THE
SOUTH AFRICAN ORNITHOLOGISTS' UNION.

Vol. III.

DECEMBER 1907.

No. 2.

XII.—*The Waltzing Instinct in Ostriches.* By J. E. DUERDEN, M.Sc., Ph.D., A.R.C.S., President S.A.O.U.

THE so-called waltzing performances of the Ostrich are familiar to all in South Africa with any experience of the bird's habits and instincts under domestication. They consist of a rapid whirling movement, sometimes one way sometimes another, the wings at the same time spread out and, along with the sides of the body, alternately elevated and depressed. It is a most fascinating sight when indulged in by a large troop of such gigantic birds. The whole action seems indicative of an excessive exuberance of spirits on the part of the creature, and suggests playfulness of a highly strenuous character.

The dance is displayed more frequently by chicks than by adult birds, and is most usually seen when chicks are first let out in the freshness of the morning from their night enclosure. At such times the escaping chicks will make a short dash forward at full speed, with head either erect or lowered and wings expanded; then, suddenly stopping, will commence to whirl round and round in a most vigorous manner, reversing with great rapidity. At times the birds will run forward with the body nearly erect; again they will lower it

and run a short distance with the head just skimming the ground, and then raise themselves with a sudden jerk and resume spinning. Occasionally during the day a troop of adult birds, if slightly disturbed, will make a short start forward and then commence the same circling movements. The performance seems always indicative of good spirits and atmospheric freshness, such as one so frequently experiences in the early morning and towards evening.

The waltzing is undoubtedly a performance of great complexity, involving a number of rapid, well co-ordinated movements of all parts of the body, and calls for considerable practice before perfection is attained. Young chicks, a month or two old, succeed in making only incomplete circles, and do this rather clumsily, sometimes stumbling in the attempt, particularly when reversing. But as they become older they perform several complete turns with great facility, though even adult birds will occasionally stumble and break their legs.

In any individual the waltzing seems to be greatly stimulated by the force of example. At first one bird in a troop will dart forward and commence the circular movements, another will follow and begin the same, and then others, until in the end the entire troop will be careering round, mutually encouraged and stimulated in their mad whirl. Some will continue until they drop exhausted, or, apparently becoming giddy, will stumble and fall. The phenomenon is only displayed in all its fullness where a number of birds are herded together. It is, however, frequently resorted to where only a few are associated, but it is never so intense nor prolonged as where the troop is large.

The behaviour is without doubt truly instinctive, though, as in many other instincts, it is greatly encouraged by example and perfected by experience. It usually begins to show itself when the chicks are several weeks old, and that it can be initiated without any previous training or example was shown by three chicks under my own care. These were taken from the parent birds when only a week old and then reared by hand, far away from all other Ostriches. It was

only after they had been under observation for three or four weeks that on first taking them out of their small enclosure they began to dart along the pathway and then, with the fore-part of body elevated and head thrown back, attempt to whirl about. Their movements at first were imperfect, and reversal would take place before a complete turn was effected. Indeed, they never accomplished more than one or two turns in either direction, and at no time became as expert in the performance as chicks which are reared together in large numbers. They afforded an excellent illustration of behaviour which, though instinctive, never reaches full perfection except under favourable conditions, in this instance the stimulating conditions being a large number of individuals on the open veld.

Such complex and highly characteristic behaviour on the part of Ostrich chicks must have some biological significance, though apparently no one has attempted the solution of the phenomenon. The theory of natural selection applied to animals assumes that in general all the structures of an animal are of some value to the creature; in whatever manner the structures may have arisen their continuance implies that they are in some way beneficial. Likewise all the activities of an animal must be assumed to be of some advantage at one time or another in the life of the individual. It must be admitted that on the surface the waltzing of the Ostrich appears to be of no direct utility to the bird, but to be merely so much intense playfulness, manifesting an exuberance of spirits, stimulated and encouraged to an excessive degree by the example of others. Even regarded as playfulness, however, one must seek to understand its meaning in the economy of the animal.

Two theories of the biological significance of the playful activities of young animals have been offered. One, that developed by the late Mr. Herbert Spencer, regards play as evidence of an exuberance of spirits, a kind of safety-valve, as it were, for the letting-out of surplus energy; an explanation well suggested by the way a healthy, vigorous boy behaves when first let loose from school. Another explana-

tion, that of Professor Karl Groos, sees a deeper meaning in all the activity and playfulness manifested by animals in their youth. It is an instinct encouraged by natural selection. While play is usually indicative of good spirits, its underlying meaning is not restricted to this. Rather it is regarded by Professor Groos as so much instinctive preparatory training and acquisition of experience for the serious business of later life, and most students of animal behaviour now accept this interpretation. The real meaning of infancy and youth is that there may be time for play, wherein certain functions may be practised before they are actually required. According to this, play in animals generally is a mimic of what the creature will have to perform when life commences in earnest, an instinctive make-believe of what life's activities will ultimately become. Such an idea is well exemplified as one compares the playful activities of a kitten with the real life of a cat under natural conditions. Professor Lloyd Morgan ('Animal Behaviour,' p. 255) expresses it as follows:—"The play of youth, we may urge, depends on instinctive propensities to experimentation in varied ways, some of more general and others of more special import; and the value of such experimentation lies in the fact that it is a means of acquiring, under circumstances more easy and less dangerous than those of sterner life, experience and skill for future use. In a word, play depends on instinctive propensities of value in education."

To understand the serious business of an Ostrich's life one must consider the conditions under which the bird exists in the wild state, for it was under these conditions that his instincts as we see them in the domesticated state were evolved. The wild Ostrich in Africa inhabits open or bushy country infested with large Carnivora, such as lions and leopards, and, like the herbivorous animals generally, he has very inefficient means of protecting himself, having to depend largely on flight. In fight the Ostrich can only kick and struggle, actions of little value as a carnivore suddenly springs upon him.

When an Ostrich is suddenly alarmed he rarely starts

running in a straightforward course, but generally darts forward, twisting and turning in a very quick, irregular fashion; if the alarm continues he then settles down into rapid flight, which is somewhat sinuous in character. Evidently some significance is to be attached to these primary characteristic movements. It is manifest to anyone who has watched Ostriches that their first frightened dodgings are just such movements as would render ineffectual the precise springing actions of Carnivora like the lion. The Ostrich jerks so quickly from side to side that no beast of prey would be likely to have time to set himself for a determined spring in one direction ere the bird had changed its course. As regards their power of doubling, I have observed an Ostrich pursuing a dog at full speed suddenly stop, turn round as if pivoted, and then flee in a directly opposite direction—a performance which probably no other animal could achieve.

May we not with good reason then interpret the waltzing movements of the Ostrich as of utility in perfecting the bird in the art of suddenly twisting and turning when alarmed, these being the movements which are most likely to assist it in eluding its natural enemies, the larger Carnivora? Indulged in instinctively as play while young and even when adult, the performance gives the bird expertness in the rapid jerking movements which are those first followed on alarm. They are complex movements for such a large bird, and when carried out with rapidity call for great co-ordination of the legs, body, wings, neck and head.

Probably some such preparatory form of play will be found in other birds which depend for escape from their enemies largely upon dodging movements. Professor C. B. Davenport, of the Carnegie Station for Experimental Evolution, Cold Spring Harbour, informs me that he has observed similar waltzing movements in a very rudimentary stage in the chicks of the barn-door fowl. Some ducklings under my own care certainly showed rapid jerking movements when only a week or two old. In an exuberance of spirits they would dart forward and suddenly turn and reverse two or three times in a most comical manner, one individual after

another taking up the performance. They never accomplished a complete turn such as Ostrich chicks ultimately succeed in doing, but still the instinct seemed much the same, though far less developed. No one who has tried to catch domestic poultry can doubt the utility of the twisting and turning actions in enabling the adult to escape.

XIII.—*Notes on the Birds observed during a Shooting-trip in Portuguese East Africa.* By RICHARD SPARROW, M.B.O.U., Major 7th Dragoon Guards.

IN May 1904, Mr. H. P. Smith, of Highlands, Natal, and I went for a two months' trip in Portuguese East Africa. We left the railway at Inkomati Station, and trekked almost due north until we reached the Singuedsi River, between the Olifants River and the Limpopo. We kept parallel to the Lebombo Mountains and from six to ten miles to the east of them: we returned by the same route.

The country traversed was almost all "thorn" country except the banks of the big rivers, and I imagine it is almost identical with the Transvaal "bush-veld." Water was scarce everywhere except in the two or three rivers we crossed, which were very low; in consequence of this I saw hardly any water-frequenting birds.

Bird-life, on the whole, was plentiful, but I had little time for procuring specimens; I believe a keen collector would take a fine series of eggs if he visited the country between the Inkomati and the Crocodile in October and November. The following notes only enumerate a portion of the birds seen, more particularly the species I had not previously noticed in the O. R. C., Upper Natal, or the vicinity of Durban, and are by no means exhaustive. As all the Weavers and Finches were in winter plumage, I was unable to identify many of them without shooting specimens.

1. LAMPROCOLIUS AUSTRALIS. Burchell's Glossy Starling.

A few seen near Maplangwane on May 30th, 1904.

2. *LAMPROCOLIUS PHENICOPTERUS BISPECULARIS*. Lesser Red-shouldered Glossy Starling.

Sabie River, June 20th, 1904: not common.

3. *ORIOIUS LARVATUS*. Black-headed Oriole.

A few seen near the Olifants River on June 17th, 1904.

4. *TEXTOR NIGER*. Buffalo Weaver Bird.

Very common between the Inkomati and Olifants Rivers; seen in small flocks near their old nests, which were generally on a tall, smooth, green-barked thorn called the fever-tree; there were four to six nests on each tree. I sometimes saw an old Eagle's nest on the same tree.

5. *PYTELIA MELBA*. Red-faced Weaver Finch.

Near Uanetzi, on May 23rd, I found a nest of this species containing five young ones only a few days old; their skin was quite black. The nest was low down in a small thorn-bush, and was composed of grass, well-lined with Guinea-fowl's feathers.

6. *EMBERIZA FLAVIVENTRIS*. Golden-breasted Bunting.

A pair seen near the Olifants River on June 17th.

7. *CINNYRIS LEUCOGASTER*. S. A. White-breasted Sunbird.

Only seen in the Olifants River Valley, where it is very common in June.

8. *UROLESTES MELANOLEUCUS*. Long-tailed Shrike.

Very common between the Inkomati and Sabie Rivers, becoming scarcer towards north.

9. *EUROCEPHALUS ANGITIMENS*. White-crowned Shrike.

Only met with in the Olifants River Valley, in small parties, where it was fairly common in June. A very handsome and conspicuous bird.

10. *TELEPHONUS AUSTRALIS*. Three-streaked Bush Shrike.

Shrikes believed to belong to this species were fairly common between the Inkomati and Olifants Rivers, but they may have only been *T. senegalus*.

[Major Sparrow's supposition that the birds observed by

him were not *T. senegalus* is probably correct, as there is no mistaking this species for *T. australis*, owing to the great difference in size: Major Sparrow's birds may, however, have been *T. minor*.—EDD.]

11. CRATEROPUS JARDINII. Jardine's Babbler.

12. CRATEROPUS BICOLOR. Pied Babbler.

Both these Babblers were very common along the whole of our route.

13. THAMNOLEA ARNOTTI. Arnott's Bush-Chat.

I observed a pair in the Olifants River Valley, and their habits were precisely those described by Mr. Walter Ayres.

14. HIRUNDO PUELLA. Smaller Stripe-breasted Swallow.

The only Swallow observed; I saw a few pairs on the Olifants River in June.

15. IRRISOR VIRIDIS. Kakelaar.

Common in small parties in the Olifants River Valley; feeding on the ground.

16. RHINOPOMASTUS CYANOMELAS. Scimitar-bill.

A few seen in the Olifants River Valley in June.

17. CORACIAS CAUDATUS. Lilac-breasted Roller.

Very common, but shy: seen during May and June all the way from the Inkomati to the Olifants River.

18. CORACIAS MOSSAMBICUS. Purple Roller.

A few pairs seen near the Sabie River in May, but they are much scarcer than *C. caudatus*.

19. CERYLE MAXIMA. Giant Kingfisher.

A pair seen on the Inkomati River on May 19th.

20. BUCORAX CAFFER. Brom-vogel.

Only one pair seen in June—near the Olifants River.

21. BYCANISTES BUCCINATOR. Trumpeter Hornbill.

Very common along the banks of the Olifants River in June.

22. LOPHOCEROS ERYTHORHYNCHUS. Red-billed Hornbill.

Very common along the whole route traversed.

23. *INDICATOR SPARRMANI*. Yellow-shouldered Honey-Guide.

Birds believed to be of this species frequently led our boys to bees' nests in the vicinity of the Olifants River.

24. *LYBIUS TORQUATUS*. Black-collared Barbet.
A common bird in this region.

25. *SCHIZORHIS CONCOLOR*. Grey Lourie.

This bird, with its irritating cry, was extremely common everywhere we went.

26. *PŒOCEPHALUS FUSCICAPILLUS*. Brown-headed Parrot.

This, the only Parrot observed, was fairly plentiful along our route, especially among the fig-trees on the banks of the Olifants River.

27. *GLAUCIDIUM PERLATUM*. Pearl-spotted Owl.

An Owl of this species seen on a high tree on the banks of the Singuedsi River on June 7th.

28. *GLAUCIDIUM CAPENSE*. Barred Owl.

An Owl, heard at night at Inkomati, I took to be of this species from its soft "kroo kroo."

29. *AQUILA WAHLBERGII*. Wahlberg's Eagle.

Only one specimen seen near the Olifants River on May 25th.

30. *EUTOLMAETUS PENNATUS*. Booted Eagle.

Two eggs, believed to belong to this bird, were brought me on June 26th: they were slightly incubated. Both are of a whitish ground-colour with a green membrane: one is profusely covered with reddish-brown blotches and spots, more especially at the larger end, and measures $2\frac{9}{16} \times 2\frac{1}{16}$ in.; the other egg is smaller, and is of a whitish ground with a few faint spots and smears at the large end only, and measures $2\frac{2}{8} \times 2$ in. The "Hlenganis" called the bird "Ukosi," so it was certainly not a Bateleur, which they call "Ungulu"; besides, Mr. Smith saw this bird and described it as having a brown back, and he knew a Bateleur well by sight.

31. *EUTOLMAETUS BELLICOSUS*. Martial Eagle.

A pair seen on the Sabie River on May 21st, 1904.

32. *SPIZAETUS CORONATUS*. Crowned Hawk Eagle.

A pair of Eagles seen near the Olifants River on May 31st, which I am almost sure were of this species.

33. *HALIAETUS VOCIFER*. Sea Eagle.

Only seen on the Olifants River on May 29th.

34. *HELOTARSUS ECAUDATUS*. Bateleur.

This Eagle was very plentiful between the Inkomati and Olifants Rivers. On June 15th I found a nest in a tall thorn near the Olifants River containing one egg, which I left; four days later I sent one of the boys to get the eggs as I was leaving the district, and he brought me two fine fresh eggs. Both are of a dirty white ground with a green membrane. One is profusely blotched and spotted, especially at the larger end, with reddish purple, most of the blotches being deep in the shell; it measures $2\frac{9}{16} \times 2\frac{1}{16}$ in. : the other egg shows very indistinct reddish-purple blotches at the small end only; it measures $2\frac{9}{16} \times 2\frac{1}{8}$ in. Both these eggs are very much rounded at the small end, whereas the egg of "*pennatus*" is pointed.

35. *CIRCAETUS PECTORALIS*. Black-breasted Harrier Eagle.

One pair was seen near the Olifants River on June 16th. The "Hlenganis" call them "Isiziben."

36. *NECROSYRTES PILEATUS*. Hooded Vulture.

On the 19th June I saw a pair of these birds near the Olifants River. I was particularly struck with the scarcity of Vultures in the districts traversed (no other species was observed), whereas Eagles of all kinds, especially Bateleurs, were numerous.

37. *EPHIPPIORHYNCHUS SENEGALENSIS*. Saddle-bill.

A solitary bird was seen on the Olifants River on May 31st, 1904.

38. *BUTORIDES ATRICAPILLA*. Green-backed Heron.

A pair believed to belong to this species was observed on the Sabie River on July 7th.

39. HAGEDASHIA HAGEDASH. Hadadah.

A few were seen near the Olifants River on May 31st.

40. ALOPOCHEN ÆGYPTIACUS. Berg Goose.

Only one pair was observed—on the Olifants River on May 31st.

41. VINAGO DELALANDII. Green Fruit Pigeon.

These Pigeons were very common along the Olifants River, feeding on the fig-trees; they were fairly plentiful all along our route.

42. PTEROCLES BICINCTUS. Double-banded Sandgrouse.

Fairly common on the left bank of the Olifants River, and very partial to red soil, with which its eggs completely harmonise. I took a fresh clutch of these eggs on June 12th, and clutches of three, two and one on the following day, slightly incubated. A single egg was brought me on the 25th.

43. FRANCOLINUS COQUI. Coqui Francolin.

A few of these Francolins were shot near Inkomati in May.

44. FRANCOLINUS SEPHENA. Crested Francolin.

This species was fairly common, and several were shot in May near the Sabie River.

45. FRANCOLINUS NATALENSIS. Natal Francolin.

A few were seen on the banks of the Olifants River in June.

46. PTERNISTES SWAINSONI. Swainson's Francolin.

One bird, which had been snared by a native, was brought to me at Maplangwane on June 30th.

Specimens of another Francolin, believed to be *F. shelleyi*, were shot but not properly identified.

47. NUMIDA CORONATA. Crowned Guinea Fowl.

Extremely common between the Sabie and Olifants Rivers, occurring in large flocks, especially near patches of Kaffir-corn.

48. GUTTERA EDOUARDI. Crested Guinea Fowl.

Only one flock met with near the Massitonto River on July 4th, one of which was caught alive by our boys; they are said to be quite common near Delagoa Bay.

49. OTIS RUFICRISTA. Red-crested Knorhaan.

A few solitary individuals seen and one shot near Uanetsi on May 23rd.

50. OTIS MELANOGASTER. Black-bellied Knorhaan.

A few seen and one specimen shot near the Sabie River on May 31st; this species is easily recognised by its long legs.

51. OTIS KORI. Gom Paauw.

We only met with this Paauw twice, once close to the Sabie River, at Maplangwane, on May 20th, when we saw five birds, and again near Inkomati, when we saw only one bird on burnt veld. I had expected to find this bird much more numerous.

52. STRUTHIO AUSTRALIS. Southern Ostrich.

We met with a herd of about twenty-five birds near the Massitonto River, one of which Mr. Smith shot, at the beginning of July.

XIV.—*Notes on Birds observed and collected in the Districts of Port St. Johns, Lusikisiki, Flagstaff, and Bizana, Pondoland, during the Years 1904 to 1906 and the beginning of 1907.* By C. G. DAVIES, C. M. Rifleman.

(Plates VIII. & IX.)

THE following birds have, with a few exceptions, been collected by myself in the above districts. This part of Pondoland is for the most part grassy down country, a good deal cut up by rivers and deep valleys with well-wooded sides, and near the coast there is an almost unbroken forest-belt. I have followed the nomenclature of Stark and Selater's 'Birds of South Africa.'

1. CORVULTUR ALBICOLLIS. White-necked Raven.

Very common everywhere.

2. *CORVUS SCAPULATUS*. Pied Crow.

Common at Lusikisiki, scarcer at Flagstaff, and rare at Biguna.

3. *CORVUS CAPENSIS*. Black Crow.

Not common except at Biguna.

4. *BUPHAGA ERYTHORHYNCHA*. Red-billed Oxpecker.

Rather scarce: only found in the low country near the coast.

5. *AMYDRUS MORIO*. Red-winged Starling.

Very common everywhere, building in cliffs at the mouth of the Umzikubu River on ledges, sometimes only a few feet above the water.

6. *LAMPROCOLIUS PHENICOPTERUS*. Red-shouldered Glossy Starling.

Common everywhere except near the coast, where they are scarcer.

7. *LAMPROCOLIUS MELANOGASTER*. Black-bellied Glossy Starling.

Very common in the forest country along the coast, especially at Port St. Johns.

8. *ORIOIUS GALBULA*. Golden Oriole.

Very rare. I saw a pair at Bizana in February 1906, and secured the female (immature). They were very wild, and I only managed to secure this specimen by discovering that they roosted in a certain plantation, where I waited for them one evening. I never saw the other again; I believe it was a mature male.

Eyes crimson; beak black, reddish at base; feet and legs slate.

9. *ORIOIUS LARVATUS*. Black-headed Oriole.

Common in all the bush country and rather tame.

10. *HYPHANTORNIS SPILONOTUS*. Spotted-backed Weaver.

Common everywhere.

11. *HYPHANTORNIS SUBAUREUS*. Yellow Weaver.

Not very common; commonest at Flagstaff along the banks

of the Umzinhlava River. I have seen a colony of this and the previous species nesting in the same tree, and the nests appeared to be exactly similar.

12. *SITAGRA OCULARIA*. Smith's Weaver.

Fairly common everywhere, generally in pairs.

13. *SITAGRA CAPENSIS OLIVACEA*. Eastern Cape Weaver.

Not common, and locally distributed — Lusikisiki and Bizana.

14. *SYCOBROTUS GREGALIS*. Black-backed Weaver.

Rather common in all the forest country.

15. *AMBLYOSPIZA ALBIFRONS*. Thick-billed Weaver.

Not common, but generally distributed, perhaps commonest at Port St. Johns; there were a good many nesting in the reeds near the Pont just now.

16. *LAGONOSTICTA RUBRICATA*. S. African Ruddy Waxbill.

Common, generally in pairs.

17. *ESTRILDA ASTRILDA*. Common Waxbill.

Very common everywhere.

18. *ESTRILDA CLARKEI*. Orange-breasted Waxbill.

Not common, generally in small flocks.

19. *ESTRILDA DUFRESNII*. Dufresne's Waxbill.

Common at Flagstaff, scarcer elsewhere.

20. *ORTYGOSPIZA POLYZONA*. Bar-breasted Finch.

Common everywhere.

21. *SPERMESTES SCUTATUS*. Hooded Weaver Finch.

Rather scarce. Flagstaff and Bizana.

22. *QUELEA ERYTHROPS*?

In October 1905 I shot two small Red-headed Weaver Finches. As I could not identify them I sent them to the S.A. Museum, Cape Town. Mr. Peringuey, the Director, believes them to be *Q. erythrops*, which has so far not been recorded from S. Africa. Both these birds were moulting, and one of them had some red feathers on the mantle and

breast, which looks as if they would have had these parts red in the full plumage, in which case they would be a new species. I had intended to have looked out for more, but unfortunately I was removed from Flagstaff and have not been there since, nor have I seen any of these birds elsewhere. They were consorting with *Pyromelana oryx* and *Coliopasser ardens* in the reeds of a marsh close to the village.

23. PYROMELANA ORYX. Red Bishop Bird.

Local. Common at Flagstaff and Bizana, but I have not seen them at Lusikisiki or St. Johns.

24. PYROMELANA CAPENSIS APPROXIMANS. Black-and-yellow Bishop Bird.

Not common. Flagstaff and Lusikisiki.

25. UROBRACHYA AXILLARIS. Red-shouldered Widow Bird.

Common everywhere.

26. COLIOPASSER PROCNE. Great-tailed Widow Bird.

Not common, but generally distributed.

27. COLIOPASSER ARDENS. Red-collared Widow Bird.

Very common everywhere.

28. VIDUA PRINCIPALIS. Pin-tailed Widow Bird.

Fairly common everywhere except Port St. Johns.

29. POLIOSPIZA GULARIS. Streaky-headed Seed-eater.

Very common.

30. SERINUS CANICOLLIS. Cape Canary.

Common everywhere.

31. SERINUS FLAVIVENTRIS. Yellow-bellied Seed-eater.

Common everywhere.

32. EMBERIZA FLAVIVENTRIS. Golden-breasted Bunting.

Not common ; generally found in mimosa thorn bush.

33. TEPHROCORYS CINEREA. Red-capped Lark.

Local : common, Bizana ; scarcer elsewhere.

34. MACRONYX CAPENSIS. Orange-throated Long-claw.

Very common in grass country.

35. *MACRONYX CROCEUS*. Yellow-throated Long-claw.

Scarce. Commonest at the mouth of Umtamvuna River on the Natal border ; scarcer as one goes south. Only found on low-lying country near the coast. In my opinion the note is very different from *M. capensis*, and they are also much fonder of perching on trees, almost invariably doing so on being flushed.

36. *ANTHUS CHLORIS*. Small Yellow-tufted Pipit.

Scarce. One specimen, ♂, Bizana.

37. *ANTHUS PYRRHONOTUS*. Cinnamon-backed Pipit.

Local. Very common at Bizana.

38. *ANTHUS RUFULUS*. Lesser Tawny Pipit.

Local. Fairly common at Flagstaff. Generally found in the mealie-lands in pairs.

39. *MOTACILLA VIDUA*. African Pied Wagtail.

Found commonly on the larger rivers, especially at the mouths.

40. *MOTACILLA LONGICAUDA*. Grey-backed Wagtail.

Not common, but generally distributed. Usually found on rocky streams, especially those running through bushy kloofs.

41. *PROMEROPS GURNEYI*. Natal Long-tailed Sugar Bird.

Rather scarce and somewhat migratory ; only found in the higher ground. Generally present when the aloes are in bloom. It is also fond of the flowers of the blue gum. Flagstaff and Bizana.

42. *NECTARINA FAMOSA*. Malachite Sunbird.

Not common. More or less migratory, generally appearing when certain flowers are in bloom.

43. *CINNYRIS AFER*. Greater Double-collared Sunbird.

Not uncommon.

44. *CINNYRIS CHALYBEUS*. Lesser Double-collared Sunbird.

Fairly common.



Photo by A. D. Millar, Durban.

Nest of **BLACK SUNBIRD** (*Cinnyris amethystinus*).

45. *CINNYRIS AMETHYSTINUS*. Black Sunbird. (Plate VIII.).
Fairly common everywhere.

46. *CINNYRIS VERREAUXI*. Mouse-coloured Sunbird.
Common in the coast bush, but not easy to procure, as it
is always on the move.

47. *CINNYRIS OLIVACEUS*. Olive-coloured Sunbird.

This and the preceding species, being dull-coloured, are
liable to be overlooked, as unless seen close by they will
generally be mistaken for the females of other more bril-
liantly plumaged Sunbirds.

I have lately found this species fairly common at Port
St. Johns. The males have a distinct wash of orange on the
throat and upper breast, not mentioned in Stark and Selater,
and the forehead and front of crown are slightly iridescent.
They are also a little larger than the measurements given
♂ ad. Port St. Johns, 3.4.07. Length $6\frac{1}{4}$ "', wing $2\frac{3}{4}$ "'
tail $2\frac{1}{4}$ "' *.

48. *ANTHOTHREPES COLLARIS*. Collared Sunbird.

Rather common in the forest country; often found asso-
ciating with the White-eyes.

49. *ZOSTEROPS VIRENS*. Green White-eye.

Very common in bush country and gardens.

50. *PARUS NIGER*. Black Tit.

Not uncommon, especially at Flagstaff.

51. *LANIUS COLLARIS*. Fiscal Shrike.

Common at Bizana, but scarce at Lusikisiki and Flagstaff.
I have not seen it at St. Johns.

52. *LANIUS COLLURIO*. Red-backed Shrike.

Not common, but generally to be found in summer
wherever there is thorn-bush.

53. *TELEPHONUS SENEGALUS*. Black-headed Bush-Shrike.

Very common everywhere.

54. *DRYOSCOPIUS CUBLA*. Lesser Puff-backed Shrike.

Common.

* [This is now the type of a new subspecies, *C. o. daviesi*, Haagn.—EDD.]
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55. *DRYOSCOPUS RUFIVENTRIS*. Greater Puff-backed Shrike.

Common in the lower country and valleys.

56. *LANIARIUS RUBIGINOSUS*. Ruddy-breasted Bush-Shrike.

Fairly common in bushy kloofs.

57. *LANIARIUS OLIVACEUS*. Olive Bush-Shrike.

Scarce. One specimen, ♂, Flagstaff.

58. *LANIARIUS SULFUREIPECTUS*. Orange-breasted Bush-Shrike.

Scarce.

♂ adult. Flagstaff, 15.8.05.

♂ juv. Bizana.

59. *LANIARIUS STARKI*. Southern Grey-headed Bush-Shrike.

Scarce, Flagstaff: common, Port St. Johns. Rather hard to procure.

60. *PYCNONOTUS LAYARDI*. Black-capped Bulbul.

Very common everywhere.

61. *ANDROPADUS IMPORTUNUS*. Sombre Bulbul.

Common.

62. *PHYLLOSTROPHUS CAPENSIS*. Cape Bristle-necked Thrush.

Common in forest country and bushy kloofs.

63. *PHYLLOSCOPUS TROCHILUS*. Willow Warbler.

Fairly common in summer, especially in the town at Bizana.

64. *ACROCEPHALUS BÆTICATUS*. African Reed Warbler.

Fairly common along the rivers and marshes.

65. *SCHENICOLA APICALIS*. Fan-tailed Reed Warbler.

Not common. Flagstaff, Lusikisiki, Bizana.

66. *APALIS THORACICA*. Bar-throated Warbler.

Rather common everywhere.

67. *PRINIA HYPOXANTHA*. Saffron-breasted Wren Warbler.
Fairly common.
68. *CISTICOLA TERRESTRIS*. Wren Grass Warbler.
Very common everywhere in grass country.
69. *CISTICOLA NATALENSIS*. Natal Grass Warbler.
Not uncommon.
70. *SPHENEACUS INTERMEDIUS*. E. Province Grass-bird.
Not uncommon in long grass near the rivers and streams ;
very hard to flush.
71. *TURDUS OLIVACEUS*. Cape Thrush.
Very common in forest country.
72. *MONTICOLA RUPESTRIS*. Cape Rock Thrush.
Not uncommon on the higher ground and among rocky
ground and kranzes.
73. *MONTICOLA EXPLORATOR*. Sentinel Rock Thrush.
The only specimens I have come across were two pairs I
found on a rocky hill near Bizana in August 1906. I secured
one pair of adults.
74. *MYRMECOCICHLA BIFASCIATA*. Buff-streaked Chat.
I procured a pair of these birds not far from the Natal
border near the Tugela Mountain in August 1906. These
are the only ones I have seen.
75. *PRATINCOLA TORQUATA*. S. African Stone-Chat.
Fairly common throughout.
76. *SAXICOLA FAMILIARIS*. Familiar Chat.
Scarce. One specimen, ♂, Flagstaff.
77. *THAMNOLÆA CINNAMOMEIVENTRIS*. White-shouldered
Bush Chat.
I have found a few of these birds in rocky places and cliffs
along the river-banks at Flagstaff and Bizana. They are
lively birds, with a loud call. They also have a way of
jerking up their tails, at the same time expanding them.

78. *COSSYPHA BICOLOR*. Noisy Robin Chat.

I shot one specimen in the thick bush at Port St. Johns in June 1905. This is the only one I have seen.

79. *COSSYPHA NATALENSIS*. Natal Robin Chat.

Ad. ♂.

Not uncommon. I have not seen one before. This specimen was in some thick undergrowth, making a curious noise of two notes, something like that of a tree-frog.

80. *COSSYPHA CAFFRA*. Cape Robin Chat.

Not very common, but generally distributed.

81. *COSSYPHA SIGNATA*. Brown Robin Chat.

Not common. Ad. ♂. Port St. Johns, 11.4.07.

It haunts the thickest portions of the bush, and is rarely seen.

82. *TARSIGER SILENS*. Silent Bush Robin.

Migratory; found along the coast only in winter, when it is fairly common.

83. *ERYTHROPYGIA LEUCOPHRYS*. White-browed Ground Robin.

The only place I have seen these birds was in the thorn-bush along the banks of the Umtamvuna River, on the Natal border. They were hopping about on the ground, and occasionally perching on the top of a bush and uttering a short song. I shot one specimen, an adult male.

84. *LIPTILUS NIGRICAPILLUS*. Bush Blackcap.

Scarce. I shot three specimens at Flagstaff. They are quiet birds, and stick to the thick undergrowth and creepers in the bush.

85. *MUSCICAPA GRISOLA*. Spotted Flycatcher.

Fairly common in bush country.

86. *ALSEONAX ADUSTA*. Dusky Flycatcher.

Port St. Johns. Rather common.

87. *PACHYPRORA CAPENSIS*. Cape Flycatcher.

Very common in bush country.

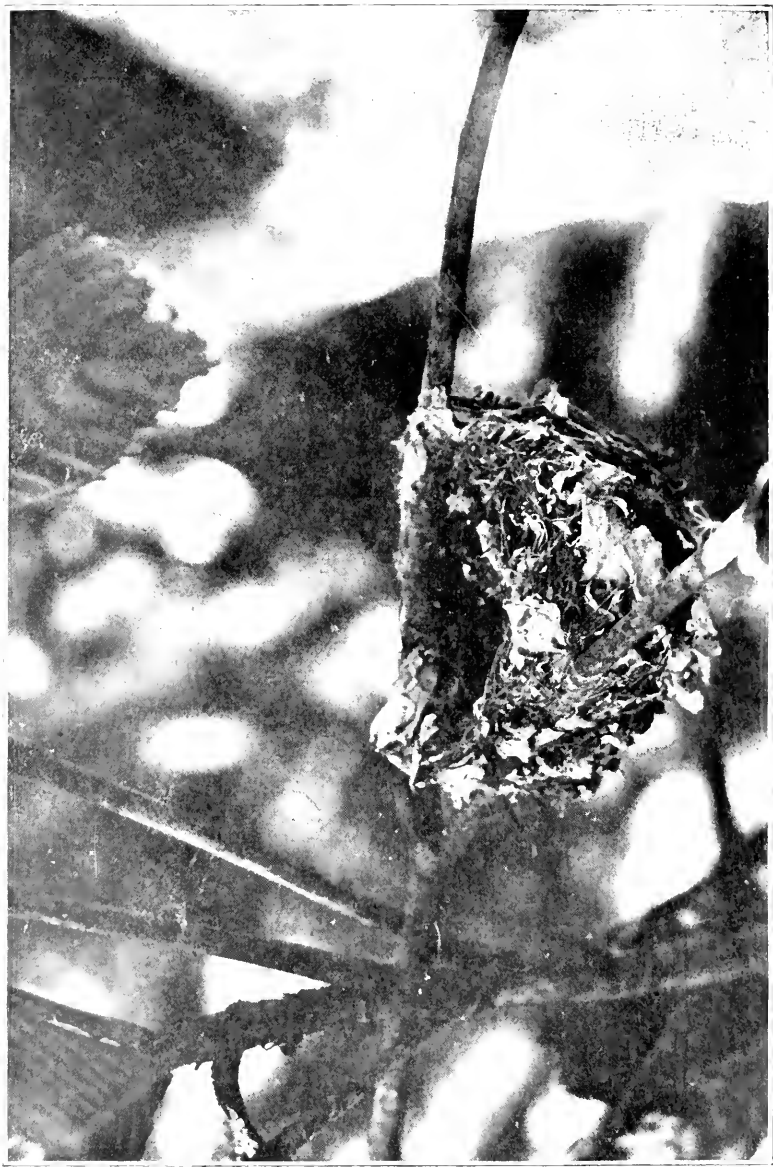


Photo by A. D. Miller, Darhan.

Nest of SQUARE-TAILED DRONGO (*Dicurus ludwigi*).

88. *PACHYPRORA MOLITOR*. White-flanked Flycatcher.

♂ ♀. Umgazi River mouth, 1.4.07.

Rather uncommon. Those I have seen have always been in the more open thorn-bush in the river valleys.

89. *TROCHOCERCUS CYANOMELAS*. Blue-mantled Fly-catcher.

Not uncommon in forest country. It has a harsh note, and is sometimes very tame, often coming quite close to have a look at you.

90. *TERPSIPHONE PERSPICILLATA*. Paradise Flycatcher.

Not uncommon in the bush and along the river-banks.

91. *DICRURUS AFER*. Fork-tailed Drongo.

Very common everywhere.

92. *DICRURUS LUDWIGI*. Square-tailed Drongo. (Plate IX.)

Much scarcer than *D. afer*, and confined to the forest-belt along the coast.

93. *CAMPOPHAGA NIGRA*. Black Cuckoo Shrike.

Rather scarce. I have so far only succeeded in getting two females, which seem commoner than the males.

94. *GRAUCALUS CÆSIUS*. Grey Cuckoo Shrike.

A rather common bird in the bush country.

95. *PTYONOPROGNE FULIGULA*. Rock Martin.

Not uncommon wherever there are cliffs.

96. *HIRUNDO RUSTICA*. European Swallow.

Very common in summer from October to March.

97. *HIRUNDO ALBIGULARIS*. White-throated Swallow.

Fairly common throughout.

98. *HIRUNDO CUCULLATA*. Larger Stripe-breasted Swallow.

Very common everywhere.

99. *HIRUNDO PUELLA*. Smaller Stripe-breasted Swallow.

Fairly common on the lower ground, especially along the coast at Port St. Johns, where they are as common as the previous species.

100. *PSALIDOPROCNE HOLOMELÆNA*. Black Rough-winged Swallow.

Only found along the coast and about the forest-belt ; mostly seen in the evening and during cloudy weather.

101. *UPUPA AFRICANA*. South African Hoopoe.

Very rare. I shot one ♂ at Bizana, and have heard of one being shot near Port St. Johns lately.

102. *IRRISOR VIRIDIS*. Kakelaar.

Not uncommon. Found in both forest and thorn country. The length of the beak seems to vary a great deal ; whether this is a sign of age or not I do not know.

103. *CYPSELUS BARBATUS*. Black Swift.

Fairly common.

104. *CYPSELUS AFRICANUS*. White-bellied Swift.

Not uncommon.

105. *CYPSELUS CAFFER*. African White-rumped Swift.

I have noticed a good many of these birds at Flagstaff and Port St. Johns, but do not remember having seen them elsewhere.

106. *CAPRIMULGUS EUROPÆUS*. European Nightjar.

Nightjars of any species seem far from common in Pondo-land. This is the only species I have come across.

a. ♂ ad. Bizana.

b. ♀ ad. Near St. Johns, 16.1.07.

107. *CORACIAS GARRULUS*. European Roller.

Very rare.

a. ♂ ad. Lusikisiki, January 1905. This specimen was shot in one of the gardens in the village.

108. *CERYLE RUDIS*. Pied Kingfisher.

This bird is somewhat local. I have found it fairly common at Port St. Johns and streams in the neighbourhood, but further north I have only procured one specimen at the Umtamvuna mouth. It must be also migratory, as none are to be seen during the winter months.

109. *CERYLE MAXIMA*. Giant Kingfisher.

Found on all the larger rivers, especially near the coast ; the females seem commoner than the males. I have often seen them fishing off the rocks in the sea itself.

110. *ALCEDO SEMITORQUATA*. Half-collared Kingfisher.

Rather common ; found on both the large rivers and on the smaller streams.

111. *CORYTHORNIS CYANOSTIGMA*. Malachite Kingfisher.

Common on the rivers and even small rills.

112. *ISPIDINA NATALENSIS*. Natal Kingfisher.

Not common ; found mostly in the river valleys and scrub near the coast—often far from water. Commonest near Flagstaff and Port St. Johns. The stomach of one ♂, shot 12.2.07 at St. Johns, contained three fairly large grasshoppers.

113. *HALCYON ALBIVENTRIS*. Brown-hooded Kingfisher.

Fairly common in the lower valleys and along the coast, especially at St. Johns.

114. *HALCYON SENEGALOIDES*. Mangrove Kingfisher.

Rare. The skin of an adult male was sent me from Port St. Johns in November 1906. This is the only specimen I have heard of.

115. *COLIUS STRIATUS*. Speckled Mouse-Bird.

Common everywhere.

116. *BUCORAX CAFER*. Brom-vogel.

Not uncommon in the grass country ; commonest on the flats by the coast.

117. *BYCANISTES BUCCINATOR*. Trumpeter Hornbill.

Rather common in all the forest country. They move about a lot, their movements being governed by the fruit-supply. They seem especially fond of the wild figs. The young birds are not bad eating.

118. *LOPHOCEROS MELANOLEUCUS*. Crowned Hornbill.

Not uncommon in the forest country and river valleys :

also sometimes found in gardens. I have seen them sometimes indulging in wonderful evolutions on the wing, flying round and in and out of the branches, with wonderful twists, turns, and sudden swoops.

119. HAPALODERMA NARINA. Narina Trogon.

This is not a common bird anywhere, but it is to be found wherever there is a tract of forest, and in the wooded kloofs along the rivers. In Stark and Selater's book the soft parts are wrongly given. I have shot a good many of both sexes, and in all of them the soft parts were as follows, viz. :—

Adult male. Beak very pale yellowish horn, bright chrome-yellow towards the gape; bare skin above and below eye and at corner of gape bright blue, shading through green to yellow on the hinder portion; bare patch on throat bright greenish blue, becoming purplish round the edges. In Stark and Selater there is no mention of these bare patches, neither is there any indication of it in the drawing of the head; in life they are very prominent. The feet and legs are greyish pink.

The *adult female* has the soft parts much the same, only duller, and the throat-patch is flesh-coloured. In the non-breeding season I have shot males with the bare throat slate-coloured.

120. CAMPOTHERA NOTATA. Knysna Woodpecker.

Not common. I shot one adult male at Flagstaff and a female and an immature bird at Port St. Johns on the 14.2.07. I have seen a few others in the same locality.

121. DENDROPICUS CARDINALIS. Cardinal Woodpecker.

Fairly common; found mostly in more open country and among thorn-trees in the valleys.

122. MESOPICUS GRISEOCEPHALUS. Olive Woodpecker.

Common in all the forest country. This is the commonest Woodpecker in Pondoland.

123. INDICATOR MINOR. Lesser Honey-Guide.

Not common. Flagstaff and Port St. Johns.

124. *PRODOTISCUS REGULUS*. Wahlberg's Honey-Guide.

Scarce. I have only seen four of these birds, in both cases amongst black wattle trees, once at Bizana and again at Flagstaff. I procured a male bird on the latter occasion. They were hunting about for insects amongst the branches, and had a curious way of bobbing their heads.

125. *LYBIUS TORQUATUS*. Black-collared Barbet.

Not uncommon in the low country along the coast and in the valleys.

126. *BARBATULA PUSILLA*. Tinker Bird.

Very common in all the bush country. Its monotonous note is heard everywhere, although the bird itself is seldom seen.

127. *CUCULUS SOLITARIUS*. Red-chested Cuckoo.

Fairly common in bush country during the summer, but it is restless and hard to procure.

128. *CUCULUS CLAMOSUS*. Black Cuckoo.

Rather commoner than the previous species, but only found in the low country near the coast. It has a loud mournful call, which is sometimes heard at night.

129. *CHRYSOCOCCYX SMARAGDINEUS*. Emerald Cuckoo.

Not common, but found all over the forest country—commonest near the coast. I have not yet succeeded in getting a female, but have procured several male birds.

130. *CHRYSOCOCCYX KLAASI*. Bronze Cuckoo.

Not uncommon along the banks of the rivers and amongst thorn-bush, but not found in the forests. I shot an adult male at St. Johns in June 1905, so that some evidently do not migrate.

On the 19th April, 1907, I shot one specimen of *C. smaragdineus* and two of the *klaasi*, and on the 20th I shot one specimen of the second species. With the exception of the last specimen, which was in adult plumage, they were all in immature garb, moulting into adult plumage. They were all males. It is possible, then, that some of these Cuckoos do not migrate in the winter, or were these birds migrating? I shot

them all close to the camp, in the scrub-bush that grows on the sandy hills near the sea. On the other hand, in June 1904, which is mid-winter here, I shot an adult *male C. klaasi* in the same locality. Perhaps some other members of the Union might be able to throw some light on this matter*.

131. *CHRYSOCOCCYX CUPREUS*. Didric Cuckoo.

Scarce. I have personally only come across one specimen, an adult male, which I shot among thorn-bush on the upper Umzimvubu river in February 1905.

132. *COCCYSTES SERRATUS*. Black-crested Cuckoo.

Scarce. One specimen, ♂, Bizana.

133. *CENTROPUS BURCHELLI*. Burchell's Coucal.

Common, especially at Port St. Johns.

134. *TURACUS CORYTHAIX*. Knysna Plantain-eater.

Common all over the forest and bush country.

135. *PŒOCEPHALUS ROBUSTUS*. Levillant's Parrot.

Generally found in the higher forest-tracks, but sometimes found in the coast bush. They appear to roost in the forests on the sides of the Tabankulu and Ingela Mountains, leaving for their feeding-grounds early in the mornings and returning in the evening. In 1905 they came to the black wattle plantations round Flagstaff in great numbers, and I shot a good many. I found that adult males were always larger than females, and the hook at end of the beak much longer. Also the females varied a lot in plumage, some having a band of salmon-colour across the forehead, while others, apparently adult, had no signs of this: none of the males had this band. Some of the brightest-coloured females had, in addition, one or two bright yellow feathers amongst the median wing-coverts, some of them having one yellow feather on one wing and none on the other. All these birds had their crops crammed with wattle-seeds.

* [Messrs. Taylor & Ivy have procured *klaasi* in June, the former in the Transvaal and the latter in the Cape, so it would appear that *C. cupreus* is the only complete migrant of the three species of *Chrysococcyx*, the other two being residents, or "partial migrants."—EDD.]

136. *STRIX CAPENSIS*. Grass Owl.

Scarce.

♂. Lusikisiki.

♀. Near Port St. Johns.

Both these birds I flushed out of marshy ground.

137. *ASIO CAPENSIS*. Marsh Owl.

Not uncommon; always found on marshy ground. Flagstaff, Lusikisiki, Bizana.

138. *SYRNIUM WOODFORDI*. Woodford's Owl.

Rare. I have only seen one.

♀ adult. Near Bizana, in thick bush.

139. *BUBO CAPENSIS*. Cape Eagle Owl.

Scarce. One of a pair procured.

♂ adult. Near Bizana.

140. *BUBO MACULOSUS*. Spotted Eagle-Owl.

This is the commonest Owl in Pondoland.

141. *FALCO MINOR*. S. African Peregrine.

Scarce. I have only seen one specimen.

♂ adult. Emkata, 14 miles from Lusikisiki.

142. *FALCO BIARMICUS*. S. African Lanner.

Not common, but generally distributed.

143. *TINNUNCULUS RUPICOLUS*. S. African Kestrel.

Very common everywhere.

144. *BAZA VERREAUXI*. Cuckoo Falcon.

Scarce. Three specimens Flagstaff, one Biguna.

145. *AQUILA VERREAUXI*. Verreaux's Eagle.

I saw an adult one day at Flagstaff; although out of range for my gun, it was close enough for me to identify it.

146. *EUTOLMAETUS BELLICOSUS*. Martial Eagle.

Rare. I saw a fresh but mangled skin of an immature bird of this species hanging up in the verandah of a house at Port St. Johns some time ago; the owner said he had shot it near his house.

147. *SPIZAETUS CORONATUS*. Crowned Hawk Eagle.

Scarce. I shot an immature bird at Port St. Johns in June 1905. A friend shot an adult shortly afterwards at the same place. I also saw a skin of one shot here lately.

148. *LOPHOÆTUS OCCIPITALIS*. Crested Hawk Eagle.

Not common, but found all over the country, chiefly in the river valleys.

149. *HALIAETUS VOCIFER*. Sea Eagle.

There are generally a pair of these Eagles at the mouths of all the larger rivers. I found two nests, one at the mouth of the Umsikubu River and one at the Umtamvuna mouth, both were unfortunately at the tops of inaccessible trees. I shot the female at the latter place; she was an adult bird in beautiful plumage, but the eyes were dark brown, not yellow as given in Stark and Sclater's book.

150. *HELOTARSUS ECAUDATUS*. Bateleur.

Found sparingly along the coast belt. They are very wild and so far I have not obtained a specimen. A friend writes that he knows of a place where they nest.

151. *BUTEO JAKAL*. Jackal Buzzard.

Common everywhere.

152. *BUTEO DESERTORUM*. Steppe Buzzard.

Scarce. The only place I have seen these birds is about 20 miles N.E. of Bizana, where I secured a male in October 1906 and saw several others.

153. *MILVUS ÆGYPTIUS*. Yellow-billed Kite.

Very common in summer.

154. *ELANUS CÆRULEUS*. Black-shouldered Kite.

Common everywhere.

155. *ACCIPITER RUFIVENTRIS*. African Sparrow Hawk.

Scarce. I have only seen one pair, which I shot near Flagstaff in November 1905.

156. *ACCIPITER MELANOLEUCUS*. Black Sparrow Hawk.

Rare. I have only seen one specimen, a ♂, in the black-and-white plumage, shot at Emkata, 14 miles from Lusikisiki, in October 1906.

157. *ASTUR TACHIRO*. African Goshawk.

This is the commonest of the short-winged Hawks, and is found in all the bush country ; adults seem rather scarce.

158. *CIRCUS RANIVORUS*. S. African Harrier.

Rather common wherever there is marshy ground.

159. *POLYBOROIDES TYPICUS*. Harrier Hawk.

Rather scarce, but found in all the bush country, generally near rivers.

160. *GYPS KOLBII*. Kolb's Vulture.

Generally seen in numbers whenever anything dies.

161. *NEOPHRON PERCNOPTERUS*. Egyptian Vulture.

Scarce. Generally seen singly feasting with the previous species.

162. *PANDION HALIAETUS*. Osprey.

There is generally a pair of these birds on the larger rivers, but they are wild and unapproachable.

163. *SERPENTARIUS SECRETARIUS*. Secretary Bird.

Scarce. I have only seen one or two near Lusikisiki and Flagstaff.

164. *PHALACROCORAX LUCIDUS*. White-breasted Duiker.

Not common, but generally distributed along the coast during the winter months ; they seem scarcer in the summer. An apparently adult male, shot on 18.1.07 near Port St. Johns, had the throat and front of neck and upper breast a pale rufous colour, instead of white.

165. *PHALACROCORAX AFRICANUS*. Reed Duiker.

Not uncommon on some of the larger rivers, especially the Umtamvuna River, where it breeds on ledges of the cliffs at the mouth.

166. *PLOTUS RUFUS*. Snake Bird.

Rather scarce, but I have seen single birds on most of the large rivers.

167. *SULA CAPENSIS*. Malagash.

Common at sea during the winter, evidently following the

shoals of fish. They do not approach the land, but I picked up an adult, on the coast near Lusikisiki, with a broken wing.

168. *DISSURA MICROSCELIS*. Woolly-necked Stork.

I managed to procure an adult ♀ from a flock of six. They were feeding on a mudbank near the water, and looked very Ibis-like in their gait and manner of feeding; after firing, the remainder went right away and I did not see them again. The bird I got I skinned: the soft parts were as in Stark and Selater; the measurements: length 34 in., wing 17 in., tail 6½ in. The stomach contained a mass of remains of small crabs. I also saw a pair of Crowned Cranes, but did not get one; I noticed that they continually perched on the tops of the thorn-trees, a habit I have not noticed before.

169. *CICONIA ALBA*. White Stork.

Uncertain migrants, a few generally appear during the summer; they were fairly numerous during the summer of 1905.

170. *SCOPUS UMBRETTA*. Hammerkop.

Very common throughout.

171. *ADEA GOLIATH*. Goliath Heron.

Scarce. The only specimens I have seen were a pair which I saw at the mouth of the Umgazi River in January 1907. They were wild and I was unable to secure one.

172. *ARDEA CINEREA*. Grey Heron.

Not common and rather migratory. All I have seen have been at the mouths of rivers during the summer; all these were immature birds.

173. *ARDEA MELANOCEPHALA*. Black-headed Heron.

This is the commonest Heron and is generally seen in marshy places on the higher ground; I have often seen them on the open veldt far from water, evidently hunting for locusts.

174. *ARDEA PURPUREA*. Purple Heron.

Rare. ♂, nearly adult, Lusikisiki.

175. *BUBULCUS IBIS*. Cattle Egret.

Rather rare. I have only seen two specimens.

♂ adult in breeding-plumage. Umtamvuna River.

♀ adult. Port St. Johns.

176. *BUTORIDES ATRICAPILLA*. Green-backed Heron.

Scarce.

2 ♂ juv. Umtamvuna mouth.

177. *NYCTICORAX LEUCONOTUS*. White-backed Night-Heron.

Rare. I have been fortunate in obtaining three specimens.

♂ adult. Umzinhlilava River, near Lusikisiki.

♀ adult. Near Port St. Johns, 15.12.06.

♂ not quite adult. Near Port St. Johns, 18.12.06.

All three of these birds were flushed from thick branches overhanging the water. The female shot on 15th December, 1906, had eggs in the ovary about the size of a marble.

The male shot at Lusikisiki is now in the S.A. Museum.

178. *BOTAURUS CAPENSIS*. Cape Bittern.

Scarce. One or two specimens have been shot in a marsh near Lusikisiki, but personally I have not seen one.

179. *GERONTICUS CALVUS*. Bald Ibis.

Scarce. One specimen, ♂ juv., Lusikisiki, in July 1905.

180. *HAGEDASHIA HAGEDASH*. Hadadah.

Some years ago these birds were common, but they are getting scarcer every year. There are still a good many in the wilder parts. I have found two nests of this bird; they both contained young and were built of sticks in the fork of a branch.

181. *ALOPOCHEN EGYPTIACUS*. Berg Gans.

Only found in the Upper Umzimvubu and Umgazi Rivers, where they are by no means common.

182. *ANAS SPARSA*. Black Duck.

This is the only Duck I have come across in E. Pondoland; they are found sparingly in pairs and small family parties on all the rivers.

183. *VINAGO DELALANDII*. Delalande's Green Pigeon.

Not uncommon and generally distributed all over the forest country.

184. *COLUMBA PHEONOTA*. Speckled Pigeon.

Rather common in localities where there are cliffs.

185. *COLUMBA ARQUATRIX*. Olive Pigeon.

Sometimes these Pigeons are very common in the forests round Flagstaff and Lusikisiki, at other times they are scarce. Probably they are attracted by certain fruit. I believe they sometimes breed in the wooded kloofs round Flagstaff, but I have not found any nests. The males and females are about the same size, but the males can be told by their greyer colouring and the almost white forehead, the female having this part much darker ash. The spots on the wings of the male are larger and more numerous.

186. *TURTURGENA DELAGORGUEI*. Delagorgue's Pigeon.

Rare. I only know of one locality where this Pigeon is found, viz. the Goza forest, about 15 miles from Lusikisiki, where I shot a male and female in May 1905.

187. *TURTUR SEMITORQUATUS*. Red-eyed Dove.

Rather common, especially near the coast.

188. *TURTUR CAPICOLA*. Cape Turtle Dove.

Very common everywhere, except near the coast.

189. *TURTUR SENEGALENSIS*. Laughing Dove.

Not common, and only found in the thorn-bush in the valleys.

190. *CENA CAPENSIS*. Namaqua Dove.

Very rare. I obtained one specimen, ♂ adult. This is the only specimen I have ever seen or heard of having been obtained in Pondoland.

191. *TYMPANISTRIA BICOLOR*. Tambourine Dove.

Not uncommon in the bushy kloofs and deep river valleys; its note is very similar to that of the next species, but deeper.

192. *CHALCOPELIA AFRA*. Emerald Spotted Dove.

Not uncommon in the thorn-scrub in the valleys.

193. HAPLOPELIA LARVATA. Lemon Dove.

Not uncommon in the forest country and wooded kloofs. They feed mostly on the ground, and are hard to shoot, as they dash through the undergrowth.

194. FRANCOLINUS LEVAILLANTI. Cape Redwing.

Not common. The Kaffirs give these Francolins no chance, killing them whenever they can.

195. PTERNISTES NUDICOLLIS. Red-necked Francolin.

One often hears the call of these birds in the bushy valleys, but they are very hard to get, as they run into the thick scrub on the slightest alarm. The Kaffirs sometimes catch them in traps.

196. COTURNIX AFRICANA. Cape Quail.

These Quail generally arrive in September and leave again in December; some years they are very plentiful. Some appear to remain the whole year.

197. TURNIX LEPURANA. Kurriehane Hemipode.

Scarce. I have seen only one specimen, an adult male, shot at Flagstaff in January 1905.

198. TURNIX NANA. Natal Hemipode.

Not common, but generally distributed.

199. CREX PRATENSIS. European Corn Crake.

Scarce. I have shot two specimens.

♂ adult. Flagstaff, November 1904.

♂ adult. Bizana, December 1905.

200. ORTYGOMETRA PUSILLA. Baillon's Crake.

It is hard to tell how common these birds are owing to their skulking habits. I have shot one or two in a marsh close to Lusikisiki.

201. SAROTHRURA LINEATA. Jardine's Crake.

Rare. ♂ and ♀, Flagstaff, September 1904. Flushed out of long grass.

202. GALLINULA CHLOROPUS. Moor-Hen.

Not common. I have seen a few of these birds among the reeds of some of the larger rivers.

203. PORPHYRIO MADAGASCARIENSIS. King Reed Hen.

Very rare. Mr. Kilroe, a trader living near Lusikisiki, had one of these birds brought to him alive by some natives; he placed it in an empty fowl-run, and after a few days it became quite tame and ate almost everything—mealies, bread, chopped meat, and green stuff. It also has a live frog given it every day, which it eats with relish. He has had it now for about a year and it seems thriving and in good plumage. This is the only specimen I have heard of in Pondoland.

204. PODICA PETERSI. Peters' Fin-foot.

Scarce, but found on most of the rivers. They seem to prefer the still unfrequented pools, and show themselves mostly in the evening. They seem unable to fly, but splash along the surface of the water, half flying, half paddling.

205. BUGERANUS CARUNCULATUS. Wattled Crane.

Scarce. I have not secured a specimen, but I have seen a pair on the flats near Lusikisiki, and Mr. Calvary (a trader) took a young bird from a nest near the same locality and kept it for some time.

206. BALEARICA REGULORUM. Crowned Crane.

Rare. One specimen shot at Lusikisiki near the coast in January 1897.

207. OTIS LUDWIGH. Ludwig's Paauw.

These Bustards are found in fair numbers on the flats near the coast. They are very wild and hard to shoot.

208. OTIS MELANOGASTER. Black-bellied Knorhaan.

This is the only Knorhaan found in Pondoland; they are not common, but appear all along the coast. They are rather stupid, tame birds and suffer from the Kaffirs in consequence.

209. ŒDICNEMUS CAPENSIS. Dikkop.

Uncertain migrants, generally appearing in the winter months. They generally prefer old Kaffir gardens and mealie-lands amongst thorn-bush, also rocky places on the flats.

210. ŒDICNEMUS VERMICULATUS. Water Dikkop.

Rather scarce. Found rather sparingly on the muddy banks of the larger rivers.

211. *CURSORIUS TEMMINCKI*. Temminck's Courser.

Scarce. I came across these Coursers for the first time on some flats near Bizana in August 1906. They were in pairs and very tame.

212. *GLAREOLA MELANOPTERA*. Nordmann's Pratincole.

An uncertain migrant. I have only once seen these birds in Pondoland, when I came across a flock at Flagstaff in February 1904.

213. *STEPHANIBYX MELANOPTERUS*. Black-winged Plover.

Not common, but found sometimes in large flocks on flats which have been lately burnt.

214. *SQUATAROLA HELVETICA*. Grey Plover.

Found sparingly on the mudbanks of some of the larger rivers along the coast, in company with other waders.

215. *ÆGIALITIS ASIATICA*. Caspian Plover.

Scarce. I came across a flock of about twenty at Bizana. They were wild and I only succeeded in shooting two specimens, both females in moulting plumage.

216. *ÆGIALITIS HIATICOLA*. Ringed Plover.

Not uncommon wherever there are mudbanks at the river mouths. The greater number found locally are in non-breeding plumage, but I shot a male in full breeding plumage at the mouth of the Umtamvuna River.

217. *ÆGIALITIS TRICOLLARIS*. Three-banded Plover.

Scarce. One specimen at Flagstaff, December 1905. One specimen, ♂, Umtamvuna mouth.

218. *ÆGIALITIS MARGINATA*. White-fronted Sand Plover.

Common along the coast on the sandy beach. All these birds have the back sandy rufous.

219. *HÆMATOPUS MOQUINI*. Black Oyster-catcher.

Rather rare. One specimen, Umzikubu mouth, August 1905. I also saw a pair near Port St. Johns, December 1906, but did not secure one.

220. NUMENIUS ARQUATUS. Curlew.

Not common. I secured three specimens, one ♂ and two ♀, at the mouth of the Umgazi River on the 6th January, 1907.

221. TOTANUS NEBULARIUS. Greenshank.

Scarce. A few generally found on mudbanks at river mouths.

222. TOTANUS GLAREOLA. Wood Sandpiper.

Scarce. I shot one specimen, ♂ adult, at the mouth of the Umgazi River on the 28.1.07. I saw one or two others; the flight is Snipe-like and twisting.

223. TOTANUS HYPOLEUCUS. Common Sandpiper.

Common at all the river mouths and wandering a good way up the river. When winged they swim and dive well.

224. PAVONCELLA PUGNAX. Ruff.

Not common, but found during the summer both inland and on the coast. The majority I have seen were females, but I shot a male near Port St. Johns on the 12.12.06. This bird had the remains of its summer plumage.

225. TRINGA CANUTUS. Knot.

I was lucky enough to secure a specimen of this rare Sandpiper on the coast near Lusikisiki on the 25.11.06; it was a male in non-breeding plumage. Legs and feet yellowish grey, not black as in Stark and Selater.

This bird is now in the S.A. Museum.

226. TRINGA MINUTA. Little Stint.

Scarce. One specimen, ♂, Port St. Johns, 21.12.06. This was a single bird; traces of summer plumage discernible.

227. CALIDRIS ARENARIA. Sanderling.

Found in small flocks all along the coast, but never staying for any length of time in one locality. When they first arrive in October they generally have traces of summer plumage.

228. GALLINAGO MEDIA. Double Snipe.

There are not many suitable spots for Snipe in Pondoland, but at Lusikisiki and Bizana there are marshes where these birds are nearly always to be found.

229. GALLINAGO NIGRIPENNIS. Ethiopian Snipe.

Found in the same localities as the previous species.

230. LARUS DOMINICANUS. Southern Black-backed Gull.

Gulls are rarely seen along this coast, but I shot one out of three immature birds which I saw at the mouth of the Untamvuna River.

231. STERNA BERGII. Swift Tern.

No. 1. Adult ♀. Moulting, but nearly in full breeding plumage. Bill dull yellow; feet and legs black, soles spotted with yellow; eyes very dark brown, almost black.

No. 2. Immature ♀. Moulting into adult plumage, but the whole of head except forehead brownish black; sides of face and neck spotted with same. Soft parts as in the adult.

232. STERNA CANTIACA. Sandwich Tern.

No. 1. Adult ♀. Moulting into breeding plumage; a good many black feathers amongst the white of the forehead and crown.

No. 2. This specimen, ♂, which I take to be a slightly immature bird, had not moulted the streamers of the tail, which have a subterminal dark grey spot on both webs. The crown and forehead white, with numerous dark grey spots, getting darker towards the nape; the crest very little developed, the feathers edged with white.

Two other specimens were ♀, but, although moulting, were not nearly so far advanced as No. 1.

The soft parts were the same in every case, viz.: beak black, tip yellowish; legs and feet black, soles yellow; eyes very dark brown, almost black.

All these birds had a very faint pinkish blush on the breast, most visible when the feathers are raised.

The measurements of both species agree well with "Stark and Selater," but in the case of *Sterna cantiaeca* Selater says:

“outer primaries dark, *almost black*, with a white band along the inner edge of inner web, *not reaching the tips of the feathers.*” This was the case only in one (specimen No. 2), all the others have the primaries grey, with the white band extending right round the tip of the feather. In the exception (No. 2) the two outer primaries, which are the ones which agree, are evidently old feathers and are abraded at the tips.

233. STERNA MACRURA. Arctic Tern.

♂ adult, in full breeding plumage. This bird was picked up on the beach about 15 miles from Port St. Johns.

234. DIOMEDEA MELANOPHRYS. Mollymauk.

I picked up one of these birds with a broken wing on the coast near Lusikisiki.

235. PODICIPES CAPENSIS. Cape Dabchick.

Not uncommon on still reaches of all the larger rivers.

236. SPHENISCUS DEMERSUS. Jackass Penguin.

These birds are often washed up dead or dying on the coast after gales from the S.W.

XV.—*A full List of the more recent Works and Papers published on South African Birds.*—I. In ‘*The Ibis, a Quarterly Journal of Ornithology.*’ By ALWIN HAAGNER, F.Z.S., &c.

1. ALEXANDER, B. “An Ornithological Expedition to the Zambesi River.” *Ibis*, 1899, p. 549, pl. xi.; 1900, p. 70 and p. 424.
2. CLARKE, Major S. R., F.Z.S., M.B.O.U. “Field-notes on Birds obtained or observed at Bloemfontein, O.R.C., and at Ingogo, Natal, in 1901 and 1902.” *Ibis*, 1904, p. 519.
3. HAAGNER, ALWIN. “Birds’-nesting Notes from the Transvaal.” *Ibis*, 1901, p. 15.
4. ——. “Ornithological Notes from the Transvaal.” *Ibis* 1901, p. 190.
5. ——. “More Ornithological Notes from the Transvaal.” *Ibis*, 1902, p. 569.

6. IVY, ROBERT H. "Notes on the Nesting and other Habits of some South African Birds." *Ibis*, 1901, p. 18.
7. MARSHALL, GUY A. K., F.Z.S. "Notes on a small Collection of Birds from Mashonaland." *Ibis*, 1896, p. 241.
8. ——. "Notes on Mashonaland Birds." *Ibis*, 1900, p. 221.
9. RENDALL, Dr. P. "Notes on the Ornithology of the Barberton District of the Transvaal." *Ibis*, 1896, p. 165.
10. SCLATER, W. L., M.A., F.Z.S., &c. "On a Collection of Birds from Inhambane, Portuguese East Africa. With Field-notes by H. F. FRANCIS." *Ibis*, 1899, p. 111.
11. ——. "On a second Collection of Birds from Inhambane, Portuguese East Africa." With Field-notes by H. F. FRANCIS. *Ibis*, 1899, p. 283.
12. ——. "Description of a new Species of Bush-Shrike from the Knysna District of Cape Colony." *Ibis*, 1901, p. 183, pl. vi.
13. ——. "Saldanha Bay and its Bird Islands." *Ibis*, 1904, p. 79.
14. ——. "An Ornithological Expedition to the Victoria Falls of the Zambesi." *Ibis*, 1905, p. 106.
15. SHARPE, R. BOWDLER, LL.D. &c. "On the Birds of Zululand, founded on the Collections made by Messrs. R. B. and J. D. S. Woodward." With a Narrative of their Travels, by R. B. and J. D. S. WOODWARD. *Ibis*, 1897, p. 400.
16. ——. "On a Collection of Birds obtained by Mr. H. S. H. Cavendish in Mozambique." *Ibis*, 1900, p. 109.
17. ——. "Remarks on *Pitta longipennis* Reichenow and *P. reichenowi* Madarász." *Ibis*, 1903, p. 91, pl. iv.
18. ——. "On a Collection of Birds from the District of Deelfontein, Cape Colony." Part I. *Ibis*, 1894, p. 1; Part II. *Ibis*, 1904, p. 313, pl. viii.
19. SHORTRIDGE, GUY C. "On a Collection of Birds from the Neighbourhood of Port St. Johns in Pondoland." *Ibis*, 1904, p. 173.
20. SOWERBY, J. L. "On a Collection of Birds from Fort Chiquaqua, Mashonaland." With Notes by R. B. SHARPE, LL.D. &c. *Ibis*, 1898, p. 567.
21. WHITEHEAD, Lt. C. H. T., M.B.O.U., 1st Batt. H.L.I. "An Annotated List of the Birds observed on the Orange River between Aliwal North and Odendaalstroom from December 21st, 1901, to June 21st, 1902." *Ibis*, 1903, p. 222.

22. SWYNNERTON, C. F. M. "On the Birds of Gazaland, S. Rhodesia." *Ibis*, 1907, p. 30, pl. i.
23. WOODWARD, R. B. and J. D. S. "Further Notes on the Birds of Zululand." *Ibis*, 1898, p. 216.
24. —. "On the Birds of St. Lucia Lake in Zululand." *Ibis*, 1900, p. 517.

XVI.—*On a new Genus and Species belonging to the Fringillidæ from the Transvaal.* By Dr. J. W. B. GUNNING, Director of the Transvaal Museum and Zoological Gardens.

AMONG a small collection of bird-skins acquired by the Museum during the year from Mr. F. O. Noome two skins were found—a male and a female, which were shot in the Rustenburg District of the Transvaal in January 1907, and which defied identification.

Not believing that it was probable that quite a new species would be found in a district like Rustenburg, where our veteran South African ornithologist Thomas Ayres had collected for so many years, I took the liberty of sending the skins to Prof. Dr. A. Reichenow, who was kind enough to confirm my suspicion that we had to do with an entirely new species, and on closer examination and comparison it was found that although closely allied to *Anomalospiza*, Shelley, yet it could not be classed in the same genus, as it presented several characteristics not agreeing with the definition of that genus by Shelley.

Professor Reichenow writes, dated 3rd June, 1907: "This new form is evidently closely allied to *Anomalospiza*, Shelley, has like that a strongly rounded tail; the centre tail-feathers are somewhat lanceolate towards the tip. The beak resembles that of *Anomalospiza*, but the culmen is more curved, the lower mandible narrower (less high). The wing differs in this respect that the first lanceolate primary is still more distinct than in *Anomalospiza*; the second and fifth primaries are smaller than in *Anomalospiza*. The markings of the

upperside and the reddish tint of the plumage, especially on the head, remind us of the *Pyromelana* group."

I therefore propose HELIOSPIZA as the generic name, and will describe this very distinct species as HELIOSPIZA NOOMEÆ, gen. et spec. nov., in honour of Mrs. Noome, who with her husband has been fortunate and kind enough to procure many a rare and interesting specimen for our Museum.

HELIOSPIZA, gen. nov.

Beak laterally compressed and high, culmen narrow, more strongly curved than in *Anomalospiza*; the mandible is narrower than in that genus and bent downwards in an angle at the posterior end. Length of the tail less than two-thirds than that of the wing. First primary lanceolate and more distinct than in *Anomalospiza*; the second and fifth primaries a little shorter than in that genus. Tail strongly rounded; the middle tail-feathers lanceolate towards the tip.

HELIOSPIZA NOOMEÆ, sp. nov.

Forehead yellow-brown with a tinge of chestnut; crown and nape of the same yellow-brown, with black centres to the feathers, narrower near the forehead and broadening towards the neck, producing a strongly streaked appearance; a yellow-brown streak over the eye, broadening immediately behind the eye and narrowing over the ear-coverts, which are yellow-brown finely streaked with black; cheeks darker yellow-brown; chin and throat paler, which colour extends over the whole of the underside, with black streaks on the sides and centre of the breast and on the flanks, stronger in the female than the male. Back mottled with yellow-brown and black, the centres of all the feathers being black, the broad margins yellow-brown. Wings brown; the first primary very distinct and lanceolate, the other primaries with narrow yellowish-brown margins on the outer webs, lighter towards the tips, where the margins are dirty white; secondaries brown-black, with broad yellow-brown margins round the inner and outer webs, paler on the inner webs. Wing-

coverts like the back; under wing-coverts greyish white, washed with yellow. Upper tail-coverts black, with broad yellow-brown margins. Under tail-coverts pale yellow-brown, some with dark shaft-streaks to the feathers like some of the flank-feathers. Tail black, lighter towards the outer rectrices, with pale yellow margins, lighter on the underside. Upper mandible black, yellowish brown along the lower edge; lower mandible yellow, base and tip black.

Length 138-148 mm.; wing 65-66; tail 40-42; bill 9.5-10; tarsus 17-17.5.

The types—male and female—are in the Transvaal Museum, Pretoria.

Hab. Rustenburg, 1st Jan., 1907 (*Mrs. F. O. Noome*).

Pretoria, June 1907.

XVII.—*Proceedings of the Union.*

THE *Fourth* Annual General Meeting of the S. A. O. U. was held in the Board Room of the Transvaal Museum, Pretoria, on the *3rd August*, 1907, at 3.30 P.M.

Present were: Dr. J. W. B. GUNNING (Vice-President), in the Chair, and Messrs. Newton Spicer (Hon. Treasurer), B. C. R. Langford, C. W. Howard, B.A., Austin Roberts, F. Thomsen, E. M. Skea, Drs. Theiler and Gough of Pretoria, Messrs. E. H. U. Draper and A. Duncan, Johannesburg, Max Coch of Rietfontein, and A. K. Haagner (Hon. Secretary) of Modderfontein.

After the Chairman had welcomed the Members present, and the Minutes of the last Annual General Meeting had been taken as read, he asked the Hon. Secretary to read the Report.

The following is a brief summary of this Report:—

The Union continues in a satisfactory condition, numbering 115 Members at date, after adding the prospective names and deducting the nine defaulters for non-payment of 1904 subscriptions.

There were no resignations during the year, but the Council regretted to have to record the loss by death of two

Ordinary and one Honorary Member, viz., Mr. C. B. Simpson of Pretoria, Dr. Symonds of Kroonstad, and the veteran world-renowned ornithologist, Professor Alfred Newton of Cambridge.

A resolution of regret at the untimely end of these gentlemen, and of sympathy for the bereaved relatives, was passed.

The Council also regretted to announce the departure from South Africa of Mr. J. A. S. BUCKNILL, M.A., President, and Chief Editor of the Journal since its inception. Mr. HAAGNER had assumed the Chief Editorship, and the vacancy on the Editorial Committee would have to be filled.

Five issues of the Journal have been published to date, containing much original matter, two coloured and one plain lithograph, besides many half-tone illustrations.

The Migration and Bird Protection Committee held one meeting, at which the general opinion was to the effect that much could not be done yet, owing to the unsettled state of the country. Dr. GUNNING and Mr. THOMSEN were, however, appointed delegates to interview the Director of Education, and their report would better explain how far we had got. With regard to Migration, a circular had been issued giving the names of the following six birds, and requesting Members (and others) to fill in and post the postcards provided :—

European Swallow.
European Bee-eater.
Lesser Kestrel.
White Stork.
Greenshank.
Hawk-wing Pratincole.

These birds were chosen on account of their wide distribution and easy recognition by anyone.

The Secretary concluded by stating that the balance in hand at date was a little over £70. The Report and Financial Statement were adopted.

2. *Migration and Bird-Protection.*—Dr. GUNNING reported that, in accordance with instructions received from the Sub-

Committee, he and Mr. THOMSEN had interviewed the Director of Education with a view to obtaining his assistance ; Mr. Adamson had been very sympathetic, but asked the delegates to meet him again at a later date, as he was extremely busy at present.

Dr. GUNNING also reported that he had interviewed the Editor of the 'Volkstem' anent popular articles on birds, and this gentleman was quite willing to include these, illustrated if desired, in the monthly supplement it was proposed to issue.

Mr. HAAGNER suggested the advisability of a popular monthly leaflet issued by the Union in conjunction with the Journal.

On the motion of Mr. LANGFORD the whole matter was left in the hands of the Select Committee, with power for them to add to their number as they may deem best.

The election of Messrs. THOMSEN and ROBERTS by the Committee was confirmed, and Dr. LEWIS GOUGH was also added to the number, so the Committee for Migration and Bird-Protection stands at present as follows :—

Dr. GUNNING, Director Tvl. Museum, *Chairman*.

Dr. GOUGH.

F. VAUGHAN-KIRBY, F.Z.S.

F. THOMSEN.

AUSTIN ROBERTS.

A. HAAGNER, *Secretary*.

3. *Honorary Members*.—Mr. J. A. S. BUCKNILL, M.A., President S. A. O. U. for 1907, was unanimously elected an Honorary Member, in recognition of his good work for the Union while with us (1904 to 1907).

Dr. E. HARTERT, Director Tring Museum, was elected an Honorary Member, for his excellent work on certain African groups of birds.

4. *Ordinary Members*.—The following twenty-two names were read with their proposers and seconders, and on the motion of Dr. GOUGH, seconded by Mr. SPICER, their admittance by the Council was duly ratified :—

1. BAXTER, G. L. ; Cameron Highlanders, Pretoria.

2. BOOTH, H. B. ; Yorkshire.

3. BRISCOE, Dr. J. E. ; Natal.
4. CHUBB, E. C. ; Bulawayo.
5. DAVIES, C. G., C.M.R. ; Pondoland.
6. DAY, M. F., Yorkshire Light Infantry ; Pretoria.
7. HALKED, N. G. B. ; Pretoria.
8. HUDSON, C. E. ; Bloemfontein.
9. INGLE, J. C. ; Lydenburg.
10. JAMESON, H. L., M.A., D.S.C. ; Johannesburg.
11. LANHAM, W. R. ; Pretoria.
12. LITTLEDALE, H. A. P., Yorkshire Light Infantry ; Pretoria.
13. NEETHLING, H. ; Bloemfontein.
14. PÉRINGUEY, L. (Director S. A. Museum) ; Cape Town.
15. PICKSTONE, S. P. ; Johannesburg.
16. PRITCHARD, A. G. R. ; Johannesburg.
17. SHEPPARD, P. A. ; Beira.
18. SWYNNERTON, C. F. M. ; S. Rhodesia.
19. Dr. THEILER ; Pretoria.
20. A. NEHRKORN ; Germany.
21. E. C. GRAY, P. Vet. Surg. Tvl. ; Pretoria.
22. Rev. N. ROBERTS ; Pretoria.

Nine Ordinary Members were removed from the Roll for non-payment of Subscriptions for 1904.

5. *Office-bearers.*—The following are the Office-bearers and Council for 1908 :—

President.

J. E. DUERDEN, Ph.D., M.Sc., Professor of Zoology,
Rhodes University College, Grahamstown.

Vice-Presidents.

Dr. J. W. B. GUNNING, Director Transvaal Museum and Zoological
Gardens, Pretoria.

A. D. MILLAR, Col.M.B.O.U., Durban.

Dr. L. PÉRINGUEY, Director S. A. Museum, Cape Town.

Hon. Secretary.

A. K. HAAGNER, Modderfontein.

Hon. Treasurer.

NEWTON SPICER, Pretoria.

Editorial Committee.

MR. B. C. R. LANGFORD was placed on this Committee
vice MR. BUCKNILL departed.

Council.

JOHN WOOD, Cape Colony.
 Dr. J. E. BRISCOE, Natal.
 A. DUNCAN, Transvaal.
 C. MCG. JOHNSTON, Orange River Colony.
 P. MURRAY, Basutoland.
 G. A. K. MARSHALL, F.Z.S., Rhodesia.
 C. POGGE, German S.W. Africa.
 P. A. SHEPPARD, Portuguese S.E. Africa.

6. *Rules.*—Rules 6 and 11 were amended to meet the above enlargement of the Council.

Rule 15 : the following rider was added :—

“That proposed Members, when elected, shall not be placed upon the roll of Members until their first subscription has been paid ; neither shall the Journal be delivered to anyone more than a year in arrear.”

7. *Next Meeting.*—This was fixed upon for Grahamstown, C.C., in June or July 1908, in conjunction with the Meeting of the South African Association for the Advancement of Science.

8. *General.*—Dr. GUNNING exhibited two specimens, ♂ and ♀, of a remarkable new form of Fringillidæ from Rustenburg, Tvl., and made the observation that it was strange that such a well-marked new genus and species should now be discovered in a district like Rustenburg, which has been so well-worked in the past, amongst others by our veteran ornithologist “Uncle” Tom Ayres.

A full description will be found in this number.

Mr. A. K. HAAGNER exhibited a ♂ specimen of Sunbird similar to *Cinnyris olivaceus* (Olive Sunbird), from Pondoland. It differs from the typical (Natal) form in several respects : the bill is longer, the forehead is darker, and the yellow

pectoral tufts are distinctly mixed with orange-red. Should these differences prove constant in the Pondoland form (confirmation of which would be settled by the receipt of more specimens), Mr. Haagner proposed calling it

CINNYRIS OLIVACEUS DAVIESI,

after its discoverer, Sgt. C. G. Davies, of the Cape Mounted Rifles.

He did not wish to fully describe the bird yet, pending the receipt of more specimens, but Sgt. Davies informed him they were common and seemed all exactly alike. It is highly probable that it will turn out a good geographical form, as, although Shortridge collected in Pondoland, the specimens forwarded by him to the South African Museum were, strange to say, female.

Hearty votes of thanks to the Chairman, Treasurer, and Secretary terminated a very successful meeting.

XVIII.—*Occasional Notes.*

(23) BIRDS PROTECTED IN ALBANY DIVISION, C.C.—Below is a list of birds protected by special enactment in the Albany Division, C.C., mainly through the instrumentality of that excellent sportsman, Mr. Francis Graham, R.M., of Grahams-town. We are indebted to Mr. Graham for this list.

In the Municipality :

Doves of all kinds, Sunbirds, Wagtails, Woodpeckers, Large Yellow Seed-eater, Small Yellow Seed-eater, Cape Canary, Berg Canary, Cape Buntings, Waxbills (three sorts), Cape Robins, Thrushes, Bush Shrikes, other Shrikes (except Fiscal), Hornbills, Flycatchers, Swallows, Martins, Swifts, Kingfishers, Larks, Nightjars, Owls, Hoopoes, Cuckoos, Louries, Glossy Starlings, Plovers, Sandpipers, Barbets, Rock Thrushes, Chats, Warblers, Grebes, Kestrels, Hammer-Heads.

In the Division :

Secretary Birds, Small Hawks, Black-shouldered Kite, Honey Guides, all Spreeuws (except Redwing), Crows (except Black Crow), Vultures, Rollers, Orioles, Sparrows, Herons, as well as all the birds protected within the limits of the Municipality.

(24) NOTES FROM PONDOLAND.—On the 4th April, at the mouth of the Umgazi River, I shot a fine specimen of *Ardea goliath*, an adult ♂. It was rather larger than Selater's measurements, viz., length 56½", wing 24", tail 9½". They are rare birds in these parts, and I have not previously come across them, except in the above locality. This bird was winged, and looked very vicious; it made a deep growling noise when I went to tackle it, but its bark was worse than its bite.

I have also lately shot two specimens of *Podica petersi*, ♂ and ♀; both these birds were in the same plumage, viz., that ascribed to ♀ in "Stark & Selater." I have never seen them in the plumage ascribed to adult ♂. Can there be two species?—C. G. DAVIES, C.M.R.

Lusikisiki, Pondoland,
20th May, 1907.

(25) THE 'FIELD' of June 15 contains the following paragraph in the notes on the London Zoological Gardens:—

"Two Buffalo Weaver Birds (*Textor niger*) from South Africa have also been received. They are large and finch-like in appearance, with black plumage, the feathers more or less mottled with snowy-white bases, gregarious in habit, breeding in colonies, and constructing many nests in the same tree. The collective nests consist externally of an immense mass of dry twigs, in which are from four to six separate nests, in each of which are laid three or four eggs resembling sparrows' eggs, but much larger. Sir A. Smith reported that these birds followed herds of buffalo, and fed on the ticks infesting those animals; and this was confirmed by Livingstone. In the first volume of his *Stubenvögel*,



Photo by C. B. Horsburgh, of stuffed specimen in the Transvaal Museum.

POLIOHIERAX TORQUATUS (Pigmy Falcon).

published in 1879, Russ could not refer to living examples imported into Europe, and said that the species did not figure in the list of animals in the London Zoological Gardens. At least two other editions have been issued since then, and in neither does the name appear; but a single example of the closely allied Alecto Weaver Bird (*Texator alecto*) was received in 1865."

(26) PIGMY FALCON (*Poliohierax torquatus*).—We append a photograph (Plate X.) of a stuffed specimen of this uncommon little Hawk. It was taken on the nest on the 15th October, 1905, near Wolmaransstad, Transvaal, by Mr. Austin Roberts, and by him presented to the Transvaal Museum.

(27) PRECOCITY OF THE SPARROW.—A nest of the Cape Sparrow (*Passer melanurus*) situated in a rose-bush in the garden of Dr. Mehliß (Resident Physician of the Lazaretto) will take some beating as to locality. It is placed in the bush about three feet from the ground, quite close to the entrance-steps of the house, and the birds are busy building it now. Whether they will rear their brood in that exposed and lowly position remains to be seen. Although Sparrows' nests in porches, under eaves, &c., are common, they are generally placed fairly high above the ground, but this particular nest can be got at by a dog, let alone cats, and is passed hundreds of times a day.—MAX COCH.

Rietfontein Lazaretto,
6th August, 1907.

(28) ISSUE OF JOURNAL.—In accordance with the decision arrived at by the Editorial Committee, an attempt will be made to issue a tri-annual Journal in future. Members have complained—with justice—that a six-monthly interval between the numbers does not bind them sufficiently together. We therefore propose to lessen this interval by two months, and issue in January, May, and September, and in so doing

would appeal for more support—both from Members and the public. The percentage of Members who write for the Journal is exceedingly small; to contribute it is not necessary to send a long geographical list or an original essay. Small paragraphs on anything of special or general interest in the Avian world for the “Occasional Notes” column will be welcome, and will afford our younger members an opportunity of a “start” in writing.

(29) MIGRATION.—We would again remind our readers of the present influx of migrants, and trust that all who can possibly do so will comply with the request contained in the circular issued with the last number. Members need not necessarily confine themselves to the six birds mentioned, but can report upon the arrival of *any* migratory species if they so desire.

XIX.—*Short Notices of Ornithological Publications.*

17. ‘*The Ibis, a Quarterly Journal of Ornithology.*’

The January and April 1907 numbers of the “mother” of British Ornithological publications contains an extremely interesting and valuable contribution to South African Ornithology by Mr. C. F. M. Swynnerton, Col.M.B.O.U., titled “On the Birds of Gazaland, Southern Rhodesia.”

Two species new to science are included: *Erithacus swynnertoni*, Shelley, and *Apalis chirindensis*, Shelley. These two birds were originally described from Swynnerton’s collection in the Bulletin B. O. Club for June, 1906.

The following species are also recorded from southern limits for the first time:—

Nectarinia arturi.	Sylvia whytii.
Cinnyris niasæ.	Pachyprora dimorpha.
Telephonus anchitæ.	Trochocercus albonotatus.
Laniarius bertrandi.	Terpsiphone plumbeiceps.
Phyllostrophus milanjensis.	

The Chirinda Bar-throated Warbler differs mainly from

A. cinereus "in having the forehead and crown of the same shade of dusky grey as the entire upper parts, and in the white of the tail being confined to rather narrow ends of the four outer pairs of feathers."

Swynnerton's Robin is figured in a well-coloured plate by Keulemans ; it is stated by the author to be quite common in the Chirinda Forest ; he even describes the nidification of the species.

This paper contains a mass of original information on the habits and nidification of various species, and we heartily congratulate Mr. Swynnerton on the excellent results of his labours.

18. 'British Birds' (June 1907), vol. i. no. 1.

We have much pleasure in drawing attention to this new "Bird" periodical ; it is a neatly got up, attractive little monthly, published at the modest price of 10s. 6d. p. a. post free, and devoted to the Birds on the British list.

The first number contains *inter alia* additions to the List of British Birds since 1899, by Howard Saunders, and a Study of the home-life of the Osprey (illustrated by some excellent "snaps").

The magazine is edited by Messrs. H. F. Witherby and W. Pyecraft, and is published by Witherby & Co. at 326 High Holborn, London.

19. 'Novitates Zoologicae,' vol. xiii.

The July 1906 number contains a valuable contribution on the African forms of the *Pycnonotus*, by Dr. Ernst Hartert, the Director of the Tring Museum.

He divides the genus into three species :—

- I. *Pycnonotus barbatus*. Eyelid feathered. South Africa possesses two subspecies :
 - a. *P. b. tricolor*. Under tail-coverts yellow. Crown brown. South-west Africa northwards.
 - b. *P. b. layardi*. Under tail-coverts yellow. Crown black. East Cape Colony northwards.

- II. *Pycnonotus capensis*. Eyelid protruding, wattle-like.
 a. *P. c. capensis*. Eyelid whitish.
 b. *P. c. nigricans*. Eyelid reddish or chrome-orange. Crown black.
- III. *Pycnonotus dodsoni*. Eyelid not protruding and wattle-like. South Africa has no representative.

20. '*Transvaal Agricultural Journal*.'

There appears in the April 1907 number of this well got up publication an interesting article on the Sabi Game Reserve by Major J. Stevenson Hamilton, Warden, Govt. Game Reserves.

We are glad to note that game is on the increase in the Reserve, and is becoming so tame "that it is no unusual thing to pass troops of game standing or lying ruminating in the shade within a hundred yards of the path, who scarcely take the trouble to get on their feet to stare at the intruder."

Wild Ostriches have done particularly well, and are now quite numerous in their favourite localities.

Amongst the rapacious birds the Major thinks the Martial Hawk Eagle (*Spizæetus bellicosus*) the most destructive to small game, while he considers the Yellow-billed Kite (*Milvus ægyptius*) not only a perfectly harmless bird, but moreover useful, as they devour carrion. The Yellow-billed Kite is execrated amongst the Boer farmers, and its Dutch vernacular name of Kuiken-dief (chicken - thief) shows in what estimation it is held. If Major Hamilton is certain of his identification of the bird, the two facts mentioned by him disclose new phases in the economy of the Kite.

21. '*The Auk*' (*Journal of the American O. U.*).

The January number contains, amongst papers of exclusive local interest, a valuable contribution on the Pterylosis of Swifts and Humming-birds by Hubert Lyman Clark.

In the correspondence we are glad to see that Dr. Hartert emphatically denounces subgenera as unnecessary and undesirable. This is the latest form of the hair-splitting craze.

The April number contains a paper on "The present Status of the English Sparrow Problem in America," by A. H. Estabrook.

The English Sparrow (*Passer domesticus*) was introduced into the United States in 1850, and by 1875 had spread over the whole area east of the Mississippi.

Dr. Elliot Coues made, in 1880, an urgent appeal to the people to exterminate the English Sparrow for the following reasons :—

1. They do not perform the work for which they were imported.

2. They attack, harass, fight, drive away, and kill native birds much more insectivorous than themselves.

The bird has established itself as such a pest that concerted action is being taken all over the States to exterminate it.

This should be a warning to us not to import any exotic species without very careful deliberation.

22. *Annual Report of Transvaal Museum for Year ended 30 June, 1906.*

The Director and his Assistants are certainly to be congratulated upon the progress which this institution—the only one of its kind in the Transvaal—has made during the last year or two.

The exhibits are in excellent condition, and so far as the South African Division is concerned—which has, of course, the most interest for us—are fairly representative at the present moment.

According to the Report “148 birds were mounted, 42 made into skins, and 5 nests prepared for exhibition” during the year.

The bird-skin and egg collections have been enriched by the excellent collections of Mr. R. H. Ivy of Grahamstown, including amongst the former several rare species, and the latter several new to science.

23. *8th Annual Report, Giza Zoological Gardens, Egypt (for year 1906), by the Director, Capt. Stanley S. Flower.*

The total number of species of Birds exhibited in the

Gardens in 1906 was 157, an advance of twelve on the 1905 figures.

We see that Mr. M. J. Nicoll (whose name is familiar to all readers of 'The Ibis' as the energetic ornithologist and collector who accompanied Lord Crawford in the 'Valhalla' round the world) has been appointed Assistant-Director.

24. '*The Story of Bird Life,*' by W. P. Pycraft. Price 1s.

We can strongly recommend this brightly written little book to all beginners in Ornithology. It is small, handy, and cheap, and has a large amount of information compressed into a small space.

25. '*The Emu*' (*Organ of the Australasian O. U.*).

The October 1906 number contains, amongst excellent papers of local interest, one on the origin and development of parasitical habits in the Cuculidæ by C. L. Barratt. The Author gives an interesting account of the nidificatory habits of Cuckoos of various countries, citing instances of partial parasitism amongst birds as a proof of the gradual development of the habit by variation and natural selection.

The January 1907 number contains interesting half-tone reproductions of nesting-colonies of Crested Terns (*Sterna bergii*), from photographs by A. J. Campbell.

The number also contains an account of the 6th Annual Congress held at Hobart (Tasmania), from which we are glad to learn the Australasian O. U. is making steady progress. The address of the President (Surgeon-Colonel C. S. Ryan), on the Protection of Native Birds, makes interesting reading.

Col. Ryan emphasises the point raised by us repeatedly when taunted with tardiness, viz., that the education of the public is a better safeguard than mere legislation.

26. '*The Aquila*' (*Periodical of Ornithology in Hungary*).

Vol. XIII. (1906) contains an article on "The Ibis and Ornithophænology," which is a counter-criticism on the critical remarks of 'The Ibis' on the papers on migration

written by Dr. Otto Herman for the 4th International Congress of Ornithology in London.

Amongst articles of local interest, attention must be drawn to the Eleventh Annual Report of the Hungarian Ornithological Central Bureau, by Jakob Schenk, on the Migration in Hungary during the Spring of 1904.

27. *Report on the Immigrations of Summer Residents in the Spring of 1906, forming Vol. XX. of the 'Bulletin' of the British Ornithologists' Club.*

This report deals with 34 species which have been specially observed, and gives maps of each species, meteorological data, &c.

In view of the appointment of a special migration committee and the work before us in South Africa, this report has special interest for us. When the countries to which the British summer residents migrate have properly conducted surveys, the European reports will have an additional interest and importance.

The Select Committee, consisting of Dr. F. G. Penrose (Chairman), C. B. Rickett, C. B. Ticehurst, N. F. Ticehurst, and J. L. Bonhote (Secretary), are to be congratulated on their work, although this has been somewhat severely criticised by 'Nature.'

28. '*Journal für Ornithologie*,' No. 1 (January 1907).

This number contains two valuable contributions to our knowledge of the African Ornis.

The first is a further instalment of the late Baron von Erlanger's exhaustive paper on the "Avifauna of North-east Africa." It is illustrated by three coloured plates depicting the following new species: *Poliospiza collaris*, Rehw., *P. erlangeri*, Rehw., *P. reichardi*, Rehw., *P. pachyrhyncha*, Rehw., *Anthus nivescens*, Rehw.; *Tmetothylacus tenellus* (Cab.) is also figured—the female *in toto*, and the wings of both sexes. It will be remembered that the latter species was last year added to the South African List by Mr. L. E. Taylor.

The second paper is an exhaustive treatise on the Vultures of Egypt by Dr. A. Koenig. This article is illustrated by two coloured plates, one illustrating the adult and juvenile plumages of *Neophron percnopterus* and the other the adult of *Otogyps auricularis* (Daud.)—Black Vulture. Four plain lithographic drawings are also given of *Gyps fulvus* (ad. and juv.), *Otogyps auricularis* (ad.), and *Neophron percnopterus* (L.), ad.

29. 'Ornithologische Monatsberichte.'

The January 1907 number contains the description of a new Lourie—*Turacus ugandæ*—by Professor Reichenow; similar to *T. emini*, having the green of the upper surface shading into coppery yellow, not into blue-green as is the case with *emini*; tail with a purer green gloss; abdomen darker and bill stouter.

The April number contains the description, also by Reichenow, of two new African Birds: *Apus melanonotus*, belonging to the group of Black Swifts without the white rump-band and white centre to the abdomen (from Cameroon).

Cisticola isabellina, resembling *C. rufa*, but with the first primary longer, forehead brighter rufous than the rest of the upper surface; lores, cheeks, and entire underside isabelline-yellow.

The May number contains a paper on the brush-like feathers of the crown of *Balearica* by Dr. E. Hesse. He describes the feathers in detail; the shaft is spirally twisted like a screw, the larger feathers possessing from 10 to 12 turns. The two sides of the shaft are differently coloured, the one side being of a much darker yellow than the other, which on account of the spirals give a banded appearance to the feathers.

XX.—*Obituary.*

THE LATE PROFESSOR NEWTON, M.A., F.R.S.

THE following appreciative and interesting obituary notice of the late Professor Newton appeared in the 'Field' of June 15th :—

NOT only the University of Cambridge, but zoologists, and especially ornithologists, all the world over will deplore the death last week of Professor Alfred Newton, who since 1886 held the Chair of Zoology and Comparative Anatomy at Cambridge, and was President of the Cambridge Philosophical Society. As the leading ornithologist in this country, with the most extensive acquaintance with the literature of the subject, he had a world-wide reputation, and while he enjoyed the esteem and respect of his compeers, he was regarded with a reverence akin to awe by the younger generation of naturalists, who were accustomed to look up to him for enlightenment or advice in all their doubts and difficulties. Nor did they ever appeal to him in vain, for his kindly disposition prompted him at once to enter into their pursuits, and out of the fulness of his knowledge to answer their inquiries.

Nearly fifty years ago (in 1858) he helped to found "The British Ornithologists' Union," and at the time of his death was one of five original members then surviving. Of the famous journal of that society, known as 'The Ibis,' embodying the most important contributions to ornithology, and for many years enriched by the unrivalled coloured plates by the late Joseph Wolf, he was for six years the Editor, and did much to secure for it the high position amongst natural history journals which it has ever since deservedly maintained. He made an ideal editor, too, for he was master of his subject, had travelled far and wide, to Lapland, Iceland, Spitzbergen, the West Indies, and North America in the yacht of his friend the late Henry Evans of Jura; he had visited the Hebrides and other remote parts of the British Islands while prosecuting his studies of bird-life, inspected the most important public and private museums at home and

abroad, and was in constant communication with all the leading zoologists of his day. Nor should we omit to notice the share which he took in the publication of that most useful periodical the 'Zoological Record,' acting for several years as the Recorder of "Aves."

The advantages derived from his foreign travels were subsequently seen in many ways. The visit to Iceland, for example, resulted in the publication of an excellent account of the birds of that country. Very much needed at the time, it was printed as an appendix to Baring Gould's 'Iceland: its Scenes and Sagas,' 1863, and has ever since been regarded as the most authoritative work on the subject, although a more detailed and more accessible manual has been since published by the Rev. H. H. Slater. Another outcome of his visit to Iceland was the impetus given to his life-long investigations on the subject of the Great Auk, or Gare-fowl, as he loved to call it, from its Icelandic name. In these studies and inquiries he was much encouraged by his friend John Wolley, whom he accompanied to Lapland in 1855, and with whom he often discussed the possibility of the continued existence of that remarkable bird. Wolley himself had collected much information on the subject of its former distribution and last known haunts, and as the result of their joint investigations, though generously giving his friend credit for it, Professor Newton published in the 'Ibis' for 1861 (pp. 374-399) a remarkably interesting paper entitled "An Abstract of Mr. J. Wolley's Researches in Iceland respecting the Gare-fowl or Great Auk." No less important was his later contribution, "The Gare-fowl and its Historians," published in 1865 in the 'Natural History Review,' with a shorter paper in the 'Ibis' for April 1870, on "Existing Remains of the Gare-fowl," and another on "The Orcadian Home of the Gare-fowl" ('Ibis,' 1898, p. 587). All these essays fitly paved the way for a long-contemplated monograph on the subject, for which he was constantly preparing by an assiduous collection of material from every available source, historical and traditional. This monograph unfortunately was still unfinished at the time of his death. Its completion had been

interrupted by much other work, notably by the labour of editing Vols. I. and II. of Yarrell's 'British Birds,' by the publication, at long intervals, in four parts of a catalogue of the wonderful collections of birds' eggs formed by John Wolley ('Ootheca Wolleyana'), which came to him on Wolley's death, and to which during a long course of years he made many important additions. This notable work, illustrated with coloured plates of eggs, was fortunately completed only a few months before his death, and the collection was then presented by him to the University Museum of Zoology.

Of greater value to ornithologists not specially devoted to the study of birds' eggs, is his wonderful 'Dictionary of Birds,' which, with the co-operation of Professor Gadow, also appeared in four parts (to be bound eventually in one thick octavo volume), a unique work of its kind, crammed full of useful and accurate information. Side by side with the preparation and delivery of his lectures proceeded the publication of a 'Manual of Zoology,' a second edition of which was issued in 1894. In addition to these works and amongst the most notable efforts of his busy pen may be mentioned his paper in the 'Transactions' of the Royal Society on "The Extinct Birds of the Mascarene Islands," "The Zoology of Ancient Europe," "The Birds of Spitzbergen" ('Ibis,' 1865), "The Birds of Greenland" ('Arctic Manual,' 1875), "A List of the Birds of Jamaica" ('Handbook of Jamaica,' 1881). Besides these we have such memorable papers in the 'Ibis' as those giving particulars of Wolley's discovery of the breeding of the Waxwing and the Crane, and his own account of the extraordinary visitation of Pallas's Sandgrouse to the British Islands in 1863, with the subsequent history of its breeding among the sandhills of Moray, which enabled him to figure for the first time ('Ibis,' 1890, pl. vii.) the chick of this very remarkable bird.

It may be said that, with the exception of a few letters of criticism in the 'Ibis' and 'Zoologist,' Professor Newton published nothing ephemeral—nothing that was not worth printing. On the contrary, all his contributions to zoological

literature are of an enduring character, bearing the stamp of much conscientious labour, wide research, critical acumen, and extreme accuracy, all of which qualifications combine to render his publications of permanent value. Indeed, it was owing to his continual striving towards an ideal state of perfection in the presentation of facts and the explanation of their bearing which led him to delay the publication of important memoirs which might well have been printed years ago. The monograph on the Great Auk, still unpublished, furnishes a case in point. For a man of his acquirements he had a singular diffidence in his own powers, and constantly preferred to rely upon the opinions of others whom he could trust rather than to express or emphasize his own. This is observable in his deference to the views of the late Professor W. K. Parker in the articles on Birds in the 'Encyclopædia Britannica' (9th ed.), which paved the way for the subsequently published 'Dictionary of Birds,' and to the opinions of his friends, Professor Gadow, Professor Roy, Dr. Shufeldt, and Mr. Lydekker, collected in the last-mentioned work.

The practical interest which he evinced in the steps taken to secure legislation for the protection of birds ought not to pass unnoticed, since it was in a great measure owing to his support and advice that the establishment of a close time for sea-birds and wildfowl was effected. He brought the subject of bird protection before the British Association in 1868, and for several years acted as Chairman of the Close-Time Committee which was then appointed to deal with the matter in all its bearings. During that period he contributed several letters on the subject to the Natural History columns of the 'Field,' which were marked by that critical foresight and practical common sense which always characterised the expression of his published opinions.

On the subject of the migration of birds, also, he took an unflagging interest, and for many years acted as Chairman of the British Association Committee appointed for the purpose of collecting statistics on the subject. To his support and advice, with the co-operation of other active ornithologists, we are mainly indebted for the inception of the scheme for

utilising observations made at the lighthouses and lightships of the British Islands, which resulted in the publication of nine annual reports, since ably summarised by Mr. W. Eagle Clarke, of Edinburgh. When, in 1876, on the death of Edward Newman, who had conducted 'The Zoologist' from its commencement in 1843, that journal was continued by another editor, all Professor Newton's old interest seemed to be revived in the periodical in which he himself first wrote, and notwithstanding the numerous demands made upon his leisure, he found time to make valuable suggestions for its improvement, and even to contribute to its pages. Nor should we omit to notice the encouragement which he gave to the "Norfolk and Norwich Naturalists' Society," founded in 1869, and the many valuable papers which he contributed to the pages of their 'Transactions.' In all these undertakings his advice was as eagerly sought by those who knew how to value it as it was readily bestowed for the asking.

Those who took part in the last International Ornithological Congress, held in London in June 1905, will have a pleasurable recollection—now, alas! touched with sadness—of their visit to Cambridge, and of their friendly reception there by Professor Newton. Nor will they forget the remarkable collections of rare books, pamphlets, and MS. letters from famous naturalists which he then exhibited for their inspection. A catalogue of these is printed in the 'Proceedings' of the Congress, published by Messrs. Dulau & Co. in February 1907.

We have dwelt so long upon the nature of his life's work that we have little room left for such biographical details as are usually looked for in an obituary memoir. It remains to say that Professor Newton was the fifth son of William Newton, of Elveden, in the county of Suffolk, formerly M.P. for Ipswich, on whose death in 1862 the estate was purchased by the Government as a residence for the late Maharajah Dhuleep Singh. Born at Geneva on June 11, 1829, he was educated at first by a private tutor, and proceeded to Magdalene College, Cambridge, where he graduated in 1853, securing the prize for English essay in that year as well as

in the previous one. Appointed travelling Fellow of his college, 1854-63, he visited the countries to which reference has been already made, with the results above mentioned. A Fellow of the Royal Society, of which he was also a Vice-President, and of the Linnean and Zoological Societies, he was awarded the gold medal of the Linnean Society and one of the Royal medals adjudged by the Royal Society in 1900.

His death, at the age of seventy-eight, took place at Cambridge on the 7th inst., and on Monday last he was laid to rest in St. Giles's Cemetery, Huntingdon Road, in the presence of a large number of sorrowing friends, many of whom had travelled a considerable distance to pay a tribute of respect to his memory.

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PUBLISHED BY
THE UNION IN PRETORIA, TRANSVAAL.

LONDON AGENT:
R. H. PORTER, 7 PRINCES STREET, CAVENDISH SQUARE, W.

PRINTED BY TAYLOR AND FRANCIS, RED HOB COURT, FLEET STREET, LONDON, E.C.

Annual Subscription £1 1s.

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